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Presentations on professional issues and problems in agricultural education were made at the Teacher Educator's Breakfast held annually from 1957 through 1966 during the American Vocational Association Convention. These speeches were delivered by professional leaders chosen by their associates on the basis of their challenging, instructive, or provocative point of view on current issues. Some presentations were--(1) Keeping The Faith of Our Predecessors," (2) "Direction in Teacher Education," (3) "Philosophy, Theory, and Practice in Agricultural Education," (4) "Teacher Education--Tomorrow," (5) "Challenges to Leadership in Agricultural Education in The Golden Sixties," (6) "Retrospect and Prospect," and (7) Vocational Agriculture and Education As a Whole. It was concluded that this series of speeches could serve as a baseline for projecting programs for the future, and a source of renewed inspiration and courage to all members of the teacher education profession. (WB)

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AN
ANTHOLOGY
OF
TEACHER EDUCATION
IN
AGRICULTURE

A Cooperative Project of

American Association of Teacher Educators
in Agriculture

and

The Division of Agricultural Education
Department of Education
New York State College of Agriculture
CORNELL UNIVERSITY
Ithaca, New York

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PREFACE

Since 1934 a "mystery speaker" has given a speech on current issues and problems in Agricultural Education at the Annual Teacher Educator's Breakfast Meeting held during the American Vocational Association Convention. Without exception, the men chosen to fulfill this role have been professional leaders chosen by their associates because they had a point of view which was either challenging, instructive, or provocative. The speeches delivered during the period 1934-1956 were published under the title of Presentations - Teacher Trainers Breakfast Meetings, by Professor T. J. Horne, Virginia Polytechnic Institute, Blacksburg, Virginia. The proposal to combine the speeches given during the years 1957 through 1966 in a second publication was made by the Executive Committee of the American Association of Teacher Educators in Agriculture.

Appreciation is expressed to the speakers who made their presentations available. Thanks are also extended to the Education Department, New York State College of Agriculture, Cornell University, for providing facilities and funds for duplicating and distributing this volume.

While this series of speeches reflects primarily the professional issues and problems of the years when they were presented, they can also serve as a baseline for projecting programs for the future. It is hoped that this volume will prove to be a source of renewed inspiration and challenge to all members of the teacher education profession.

Harold R. Cushman, Chairman
Publications Committee
American Association of Teacher Educators of America

KEEPING THE FAITH OF OUR PRECEDESSORS

Obed L. Snowden
Head, Department of Agricultural Education
Mississippi State University
1966

I hardly need say that I appreciate the high honor of being selected to be your mystery speaker for 1966. As has been true with the mystery speakers who have preceded me, it is a great challenge, especially since we have so many among us who have distinguished themselves in the area of teacher-education in agriculture. The responsibility carried by the teacher-educators in agriculture throughout the United States is literally a responsibility for the future of our agricultural education system. There is no one among us this morning who does not know the degree to which the education of the young men entering the vocational agriculture teaching field depends on the foresight, the wisdom, the creativeness, the initiative, and the bold courage of the teacher-educators in agriculture. I want to pay tribute to our predecessors as well as issue a challenge to us who are at the helm today. Thus, the reason for the title of this paper, "Keeping the Faith of Our Predecessors."

Borrowing from the immortal words of the late Sir Winston Churchill, "Never have so many owed so much to so few." Our predecessors in teacher-education in agriculture are relatively few when measured in terms of the number of people influenced by their teachings. They were men of courage; they were men who could keep pace with the fastest thinkers in the behavioral sciences, and they were men who could "slant" their philosophy toward the pragmatic viewpoint without being accused by opponents of causing secondary-school curriculums to become too steeped in pragmatism.

Our predecessors in teacher-education in agriculture were drawn from several different disciplines. These men, under whom many of you here this morning have studied at one time or the other, were called to the task of preparing teachers for a new federally aided vocational education program. When the Smith-Hughes Act was passed in 1917, there were then several great teacher-training institutions doing a good job of training teachers for the schools of this country. What educational leaders in these institutions had dreamed of was a day when adequate money would be available for the training of teachers, for they recognized, as all educators do, that an inadequately trained teacher is a weak link in any educational system.

Therefore, educators in several of these well established institutions which had long been in the business of training teachers for our educational system looked upon the new federal legislation as a partial answer to their prayers. The administrators of these institutions knew that here was federal money for the training of teachers; and, of course, they expected to get a large share of it. But when the law was interpreted, they found that it was available only to schools "under public supervision and control." These institutions, under this interpretation, did not qualify. This, of course, proved a disheartening blow to some of the educators in these institutions. To add insult to injury, they had to see most of the federal money available for teacher-education in vocational agriculture as well as other areas of vocational education go to Land-Grant colleges; and, as many of you know, the Land-Grant colleges in those days were not considered academically respectable in the area of teacher preparation, nor were they expected to be. I point this out to illustrate what our predecessors in teacher education had to deal with. They had to have strong faith in themselves and in vocational education in order to do the job. They could expect little help or encouragement for vocational education from these disappointed institutions. Moreover, they could expect that school administrators who came under the influence of educators in these institutions to be exposed to a negative attitude toward vocational education in general.

You who have studied the development of vocational education in this country know that in the early years of the nation-wide development of vocational education, our most violent and persistent critics were educators in teacher-training institutions which were not "under public supervision and control."

Our predecessors did not necessarily resent the attitude that prevailed by some educational leaders of their day, nor should we resent the attitude of some toward us today. In fact, I believe that over the years our critics have served the cause of vocational education more effectively by their negative attitude than if they had welcomed with open arms the arrival of the national program for vocational education. Perhaps these critics of vocational education during its infancy caused our predecessors to justify every step taken toward the development of vocational-education in agriculture in the schools of this nation. This is as it should have been just as it should be today. Certainly any new idea, or educational program, that affects so intimately the lives of as many people as does vocational-education in agriculture, should be required to justify itself. Furthermore, I think that the early critics of our program served as a motivating force to "cement" our predecessors in a common cause. Likewise, I believe that the critics of vocational-education in agriculture today are serving to alert us to work toward an improved program. At least we know that we cannot be complacent.

In spite of the negative influence that existed among some individuals at the time, our predecessors were able to put a quality factor in public education that caused a great majority of the public school administratos to throw the weight of their positions, influence, and resources into developing a type of vocational-education in agriculture that served the needs of the people of their communities and the nation in that day.

Our predecessors in teacher education had to bear the great burden of learning, adapting, and executing a program of teacher education that would meet the acceptance of a demanding public, and at the same time overcome the influence of the criticisms of many leading educators of the day; and they had to do it mostly in institutions which had not been accustomed to preparing teachers. The severity of some of the criticisms hurled at vocational education during its early years of development can be illustrated by citing the following statement written by the president of a large mid-western university, not a Land-Grant university. The article was published in an internationl magazine. He wrote:

> "...Vocational education is a fraud. It is a fraud on the individual because it deprives him of his rights as a free man. It purports to teach him how to do the work that will enable him to exist but not to live. It aims no higher than a form of slavery, because it is training in the lowest form. It teaches him forms and routines, ignores even the reasons for the forms and routines. The forms and routines may change, and in a country of rapid advancing technology, such as the United States, they do change suddenly. The citizen who has only vocational training then is stranded, because he has not been given the means of adapting himself to the change."

I will leave it to your own conclusion as to how much this university president really knew about vocational education, especially about vocational education in agriculture. With our predecessors as it is with us today, a few well-meaning people talk and write about the poor image of vocational education, especially vocational agriculture, who seemingly have not taken the time to find out the facts about the program.

Over the years there has ascended an array of educational talent into teacher-education in agriculture which I challenge any area of education to match. I will not call any of them by name for fear that I might leave out your favorite. And too, the list would be too extensive to present in this paper.

These teacher-educators in agriculture whom I refer to as our predecessors found their stride early and developed a philosophy of vocational education in agriculture which includes everything that happens to people from a young age to and through adulthood. Theirs was a sound philosophy. These forerunners in teacher-education in agriculture recognized the urgent need for better educational opportunities in all areas and on all levels. The pioneers in vocational agriculture wanted and strived to get vocational agriculture treated as one of the special areas of education in the public schools, and that it be kept vocational. What they wanted and got was the maintenance of respectable standards which would bear close scrutiny of the better farmers of the day. They realized that to attempt to train boys and adults in situations that did not have the respect of the best farmers in the community was the surest way to defeat the aims and objectives of vocational education in agricultural programs. Not all vocational agriculture programs have been successful. We know this and we know why. It was certainly not because of erroneous objectives developed by our predecessors. We know that these men to whom I have been referring repeatedly knew that vocational education would change, and that teacher educators would be called upon to train teachers for new occupations. They knew that specific training within a given vocation would change. They knew that methods in instruction would have to be improved, but they also knew that there are certain fundamental educational philosophies that dare not be vacated. They knew that there are certain principles in vocational education in agriculture that cannot be compromised. Among these are the well established and fundamental principles that vocational agriculture teachers be competent in their field of teaching; that vocational agriculture teachers be supervised by agriculturally competent people; that the training situation of the learner approximate as closely as possible the real-life situation where the learning will be applied; and that learners be segregated with respect to the occupations for which they are training. I am not saying that there was complete agreement among our predecessors on these principles. Indeed, there was disagreement, but many of us were taught these principles and still hold that they are sound.

Our predecessors viewed the teacher of vocational agriculture as a teacher in the public school needing as much training in general and professional education as any other teacher in the public school. They expected him to have the ability to communicate with his students, his colleagues, and other professional people. They expected him to be a scholar-teacher -- meaning a good scholar and a good teacher. Many of our predecessors held that there is no conflict between being a good scholar and being able to acquire applied knowledge and skills. I have heard, as I am sure you have, some of our predecessors say mere scholars unable to teach have no moral right to teach; conversely, mere teachers with no conception of scholarship have no right to be in our educational system.

How is our faith today? Is it as strong as that of our predecessors? Is our philosophy today sound enough to withstand the criticisms being hurled at vocational education in agriculture? Last year Clarence Bundy told us that "The objectives of teacher-education in agriculture must be in harmony with the objectives of American agriculture..."

I suspect that teacher-educators in agriculture who do not know the objectives of American agriculture had better take a little time to find out, lest they be branded as being ignorant of the most acute problem facing this country.

In 1959, H. M. Hamlin told us that:

> "Most of all we in teacher education need a broad vision of the possibilities of agricultural education. Our present problem in agricultural education is not going to be solved by adopting some panacea, such as training for related occupations in high school. We must do more than tinker with the details of our present program. What we must do will require a long time, but we can keep the public happy as long as we are moving, as rapidly as possible, in the right direction. Defensiveness in adherence to the status quo will not pay off."

These two quotations by no means represent all of the many fine statements made by speakers at our annual teacher-training breakfast. However, these two could well be mandatory for keeping the faith and displaying courage.

Looking ahead, or perhaps I should say looking at the situation today, brings into focus many situations that were not present when federal aid first became available for developing and expanding vocational education on a nation-wide basis. Our faith in what our predecessors believed in is being "taxed" today as never before. Conflicting views are rampant. For example, in January of this year Dr. Howard Rosen, Assistant Director of Research, Manpower Administration, U. S. Department of Labor, told a group attending a National Interdisciplinary Seminar at Ohio State University that "...272 new teachers in agriculture were employed in 27 states in 1964-65 as compared with a new supply of 481 agriculture teachers..." Dr. Rosen's view is that we trained too many teachers of vocational agriculture; while teacher-educators in agriculture, during the same year, were bemoaning the fact that we did not have enough students enrolling in teacher-education in agriculture, and we are now in the process of making a national effort to recruit more young men to enter teacher-education programs in agriculture. I am not implying that Dr. Rosen's figures are wrong. He is dealing with and using the data of the U. S. Labor Department which I am sure are correct. We in teacher-education in agriculture know that we got calls for teachers of vocational agriculture this year, but we had no teachers available. Perhaps Dr. Rosen would have us tell young men that they must teach vocational agriculture if they take our curriculum. In this same talk, Dr. Rosen stated further, "...The information developed by the Department of Labor suggests that training must be offered for jobs in trade, in office work, and service functions. Less emphasis must be placed on training for agricultural employment and home economics."

I might add that the title of Dr. Rosen's paper from which these quotations were taken is, "Manpower and Labor Economics: Implication for Guidance in Vocational-Technical Education."

In late 1964, Mr. Seymour Brandwein, Deputy Assistant Director for Research, Office of Manpower, Automation and Training, U. S. Department of Labor, wrote an article under the title of "Manpower

Resources and Requirements", in which he said, "Looking ahead, it is anticipated that only one of every ten boys now living on a farm can expect full-time employment in agriculture..." We have seen these figures over and over during the past several years; and, like always, they imply that farming and agriculture are synonymous. But there is something new here. This article was published as an insert from the newsletter, Joint Council on Economic Education, November 1964. The materials published by this organization have national circulation. I must hasten to add that there was a footnote concerning Mr. Brandwein's article which stated, "The views expressed by the author do not necessarily represent the views of JCEE."

Francis Keppel, then U. S. Commissioner of Education, on November 13, 1964, sent a memorandum to all college and university presidents, heads of other interested public or non-profit private agencies and institutions, in which he explained Section 4(c) of the 1963 Vocational Education Act. In the last paragraph of this memorandum Mr. Keppel states, "...perhaps no other area of education has received as little attention from scholars as has vocational education..." Perhaps Mr. Keppel is right, or perhaps he is wrong. Moreover, he has a right to his opinion just as you and I have a right to ours. But, I must hasten to add that few people outside vocational education today think of vocational education leaders as scholars. How do you rate teacher-educators in agriculture with teacher-educators in general? How do you rate such teacher-educators as the late A. M. Fields, George A. Works, R. M. Stewart, George P. Deyoe, John T. Wheeler, and V. G. Martin, as well as W. F. Stewart, Carsie Hammonds, H. M. Hamlin, Sid Sutherland, and many others I could name, but time and space will not permit a complete listing? If there is any doubt, gentlemen, check them out. The educational philosophies of these men gave rise to the principles on which vocational education is founded today.

Now Grant Venn, Associate Commissioner for Adult and Vocational Education, speaks out again. The following is taken from the newsletter "Education U.S.A., Washington Monitor," dated October 13, 1966. Venn stated, "For the sake of the national welfare and each individual with a potential contribution to it, "academic" and "vocational" education must no longer remain separate and unequal structures within the schools."

I might add here that Dr. Venn has a very fine article in the November 1966 issue of American Vocational Journal entitled, "Occupational Education: A Lifetime Concern."

If vocational agriculture in the secondary schools of this country has been separate and unequal structures within the school, it certainly was not in keeping with the aims and objectives written by our professional forerunners. I know that in some situations this might be true, but it is not universal. The committee that wrote the educational objectives in vocational agriculture which were published in 1931, stated in the introduction, "Vocational education in agriculture is recognized and developed as a definite part of the program of public education. Therefore, a statement of the aims and objectives of this phase of vocational education must be in harmony with and support the general objectives and philosophy of the whole of public-school education. This implies that as the general objectives and philosophy of the whole of public-school education changes, the educational objectives of vocational education in agriculture should change, and indeed they have. We now have new educational objectives for vocational education in agriculture. The new objectives embody all that the old objectives had plus much more.

Although teacher-educators in agriculture may respond somewhat slowly to social and technological changes, we cannot remain unaffected by changes which require fundamental adjustments in our modes of thinking and acting. We remember Cayce Scarborough's speech given at our annual teacher-trainers breakfast session in Minneapolis, Minnesota in 1964, entitled, "Philosophy, Theory, and Practice in Agricultural Education." At the time, I thought Cayce was way out in "left field." Since that time, I have seen many fine vocational educators adopt some of the views expressed in Cayce's paper. Perhaps Cayce's influence as a teacher-educator in agriculture is growing.

The most recent dramatic change that should affect teacher-education in agriculture was the passage of the 1963 Vocational Education Act. This new act revised the language of the Smith-Hughes Act to permit vocational agriculture to train for any occupation involving knowledge and skills in agricultural subjects, and it authorized the appropriation of much more money for vocational education. This change in language is so powerful and pervasive in its effects on teacher-education programs in agriculture, it will not suffice for us to be just a little better, or just a little different. Our training programs must become fundamentally different and radically more effective. How to prepare teachers of vocational agriculture to cope with the diversity of problems they will have to deal with not only on the farm but in non-farm agricultural occupations as well presents us with a challenging problem. Perhaps a partial solution to the problem is recruiting more productive scholars than we have had in teacher-education in agriculture in the past. This is not to imply that we have not had a few good scholars as agricultural education majors in the past, but we have not had enough.

If we expect the teachers we graduate to be competent enough to deal with a changing social structure as well as a changing agricultural economy, the faith of our professional predecessors in scholarship must be maintained. It seems clear then that we will need more effective help from our friends in philosophy, psychology, economics, and occupational sociology, as well as the technical subject matter people, in the preparation of vocational agriculture teachers for today and in the future.

If we make the adjustments fast enough and correctly in our agricultural education curriculums, and can get an adequate number of good scholars enrolled, we stand at the threshold of rendering a great service to the agricultural sector of our economy.

May I remind you that we are very close to the half century mark of our existence. What guiding principles for teacher-education in vocational and technical education in agriculture are we developing that we can pass on to those who will be on the scene during the next half century?

In closing, may I quote from a paper, "We Believe - A Philosophy for Vocational Agriculture" written by the late Professor V. G. Martin:

> No, we are not philosophers but God grant that we may have abiding philosophies which keep our vision pointed upwards to heights we shall never attain, but having diligently striven towards such heights we reach higher up the peak than otherwise we would have.
>
> There will be difficulties and obstacles encountered as we journey along but in the words of Robert Montgomery, '...the answer is not one big blazing action, but many little ones, fought on many different fronts - usually by unsung people who believe like giants.'
>
> Yes, we have a mission to perform and the task ahead is arduous. So let us say with Robert Service -
>
> Carry on! Carry on!
> Fight the good fight and true;
> Believe in your mission, greet
> life with a cheer
> There's big work to do, and
> that's why you're here.

DIRECTION IN TEACHER EDUCATION

Clarence E. Bundy
Professor of Agricultural Education
Iowa State University
1965

As an ROTC cavalryman in the 1920's, I earned the distinction of being a "gunner". My responsibilities involved the setting of the mechanism on a French 75 so that the projectile when fired, would land on a predetermined target. I was good at the job. I pleased the commanding officer, but we never shot the gun with a loaded shell. The one time that we were permitted to fire the gun was during Veishea, our annual student celebration when a blank was fired and the concussion took out about half of the windows of the Presbyterian Church nearby. To some extent, I believe that my "gunner's" experience in ROTC is an analogous to some of our experiences as teacher-educators in agricultural education.

The fruits of our efforts, as teacher-educators, depend primarily on four factors. They are (1) the objectives that we strive to reach, (2) the methods that we involve, (3) the skill developed in using these methods, and (4) for the enthusiasm that we develop in our students to use what we have taught. Our teacher-education programs are no better than the direction to which they are pointed. We may be "gunners" shooting at imaginary targets or we may be real "gunners" aiming at very real and important objectives. My remarks this morning will deal largely with direction in teacher education with emphasis on possible changes to be made in our individual programs.

The objectives of teacher-education in agriculture must be in harmony with the objectives of American agriculture. There is some question in regard to the objectives of American agriculture. One viewpoint is that we have experienced during the last thirty years and more particularly, during the last ten years, an explosion in technology which makes it imperative that we remove approximately sixty-million acres of crop land from agricultural use, thus bringing production in line with anticipated consumption. The second viewpoint is that we are experiencing an explosion in world population which makes it imperative that we increase production and assume greater responsibility in feeding the peoples of the world. During the past ten years vocational agricultural instructors and teacher-educators in general have been plagued with the problem of lack in prestige in farming and decreased emphasis upon the need for training in farm production. It appears that we reached the depth of pessimism and are now well on the way to an optimistic viewpoint concerning the need for trained personnel both in farming and in off-farm agricultural occupations.

The second thesis recently presented by Dr. Louis Thompson, Associate Dean of the College of Agriculture at Iowa State University suggests that instead of systematically reducing our food reserves as we have done since 1960, to prepare farm people and the general public to look upon our position as the principal supplier of food for the world and to produce as much as is needed. Farm people and others have been reminded that storage costs of farm goods have been high. Actually these costs have represented less than five percent of the National Defense Budget.

The world population in 1965 is estimated to be about 3.2 billion and will reach approximately 3.9 billion by 1975. The increase in population of 700 million during the ten-year period will exceed the present population of India or more than the entire population of the western hemisphere in 1965. Basically the problem of feeding the world rests upon the uneven distribution of population among the various countries. Asia has about seven times the population of United States and Canada, yet it has about the same amount of land in cultivation.

Studies have been made to indicate the drought periods in this country tend to come in cycles with drought periods in other large food production countries. It is important to the welfare of the world that production be maintained so the surpluses of food goods can be available at any part of the world when drought occurs. The development of industry in many of the under-developed countries shows promise of increasing their gross income to the extent that they will be purchasers of food from this country. Exports of corn and soybeans have increased greatly during the past ten years. In 1964 we exported one-seventh of our corn crop and more than 50% of our soybean crop either in the form of beans or in the form of processed materials. If we accept the thesis that we have a responsibility of feeding the people of the world, we will need to increase production during the next ten year period at an even faster rate than during the past ten year period. World food production must increase 20 to 25% during the next ten year period to meet the food requirements of the world.

It is commonly known that more food can be produced on an acre of productive land in the form of grain, especially wheat, corn and soybeans, than can be produced in the form of livestock. Cereal crops also can be transported and stored more easily and more conveniently than can animal products. As a result, it is anticipated that we will see a great increase in production of cereal crops over the world and this change can bring about change in educational needs of the people of this country. It is anticipated that the numbers of dairy cattle and hogs produced in this country will decrease slightly even with increased need for consumer goods, but that beef production will increase. The latter will be the result of the ability of ruminant animals to consume roughage and forage crops that can be grown on land unadaptable to the production of grain crops.

The role of American agriculture as a supplier of food stuff for the world is changing and with these changes we must make changes in our programs of agricultural education. These changes present many implications for us in teacher education.

The first implication has to do with the emphasis placed upon production agriculture both in high school and teacher education programs. There has been a tendency in some states to retool the vocational agriculture program entirely around off-farm agricultural occupations assuming that there is no need for training in production agriculture. In some states we have assumed that there is still a great need for persons in production agriculture occupations. According to the U. S. Department of Agriculture, the gross income from farming in the United States in 1964 was about 42 billion dollars. Of this amount, approximately 13 billion was net income. With about 3.5 million farms in operation in the nation it would appear that we still have a great need for individuals trained in production agriculture. The need, however, will vary with the state and with the community in each state. Nearly 1.5 million farms in 1965 are considered to be noncommercial units. Of the 1.7 million farms that have disappeared since 1949, most have been small farms with total production less than $2,500 worth of products. These small farms amounted to 88% of the farms that went out of existence during this period.

Farms are becoming larger and require greater amounts of capital and more technology. Management has become the key to success in most farm operations. It appears that this will be even more true in the future. It has been predicted that the farm labor force of 7.1 million in 1960 will be reduced to about 4 million in 1980. The number of farms will be reduced from 40 to 50% by 1980, making a total of perhaps 2 to 2.3 million farms. Investment in production capital items such as fertilizer, protein concentrates and agricultural chemicals will increase 40% by 1980. It is predicted that real estate values will continue to rise. Investment in farm machinery will increase necessitating larger farms in order to make for efficient use of investment.

The predicted changes magnify the importance of trained farm managers and farm workers. The prediction is that family farms will continue. Corporate farms have been limited due to problems of obtaining efficient personnel. It appears that we, in planning our teacher education programs, must prepare vocational agriculture teachers to be efficient in helping farm operators and workers and prospective workers in meeting the challenges of agriculture of the future. We need in our state approximately 2,000 replacement farmers each year allowing for an annual decrease of about 1% in farm operators. Approximately 75% of the lower income farms in the nation are in 13 southern states. Until the operators of these farms can find employment elsewhere, it is very important that they be provided instruction to assist them in improving their gross income and standards of living.

The second implication has to do with the providing of educational programs to meet the needs of workers in off-farm agricultural occupations. In most states we have only made gestures in meeting these needs. With a high percentage of one-man vocational agriculture departments, we have found it very difficult to provide training programs to meet these needs. Jointly teacher-educators and supervisors must develop workable programs that can be used by instructors in both one-man and multiple-man departments. A recent study of nearly 8,000 graduates at Iowa indicated that 35% of the vocational agriculture graduates were farming from 9 to 14 years after graduation. Nearly 15% were engaged in off-farm agricultural occupations. It appears very probable that in the years ahead there may be as many farm boys seeking employment in off-farm agricultural occupations as seeking opportunities to farm. In some states the number entering employment in off-farm agricultural occupations will greatly exceed the number who will enter farming.

Since the instructors in our departments have not been trained to teach competencies needed in off-farm agricultural occupations, it is very important that we make provision for this type of instruction. Changes need to be made both in our in-service and preservice training programs. We have in Iowa about 120,000 workers in off-farm agricultural occupations compared to approximately 200,000 employed in farming.

The third implication of change in American agriculture for teacher education in agriculture has to do with change in curriculum content in agricultural education. A recent study completed by Dr. J. D. McComas of New Mexico State University indicated wide variations in curriculum requirements among the forty-six institutions studied, but little evidence that changes were being made to meet the changed conditions in American agriculture. Semester credits in technical agriculture required varied from less than 10 to more than 60. Semester credits in professional subjects composed of professional education, agricultural education and psychology varied from less than 10 to more than 50. Thirty-eight institutions required from 11 to 20 semester credits in agricultural education, 27 required from 6 to 15 credits of professional education, and 31 institutions required from 3 to 9 semester credits in psychology. Nine universities required no psychology. Twenty-eight of the institutions required less than 10 credits in the humanities.

In a study made by Jabro[1] in 1962, it was found that 31 of 43 institutions studied required courses in farm management and only 7 required courses in farm business records and business analysis. Only three institutuions required courses in agricultural finance. At that time no institutuions were providing instruction in off-farm agricultural occupations as separate units of study. Only 25 institutions required courses in general economics and 15 in government and political science. It is possible that some improvement has been made since that time, but these data indicate a need for careful analysis of our various curricula in order that they meet the needs of our individuals as they become teachers of vocational agriculture.

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[1] Jabro, Salim H., "Curricula in Agricultural Education at the Land-Grant Colleges and State Universities in the United States," Ph.D. Dissertation, Iowa State University, 1962.

The question arises as to whether it will be possible to provide at the undergraduate level the competencies that will be needed by future teachers of vocational agriculture. Some states have moved toward a fifth year program. Others are adding an additional quarter or semester to the present program. It is my opinion that we need to have breadth in our educational program but this can be accomplished better through the including of opportunities to take high level specialized courses rather than to fill the curriculum with survey and general introductory courses. As multiple man departments are developed we will need more flexibility in curricula in order that some students may become specialists. A careful analysis of curriculum content is very much needed. Changes can be made within existing courses or by the deletion or addition of courses.

I have already referred to the fourth implication. We must greatly expand the in-service training program for teachers of vocational agriculture. We have evidence that it isn't possible to provide all competencies needed in the pre-service program. With changes that are coming about in agriculture, teachers of vocational agriculture must have an opportunity to continually improve their competence both in regard to subject matter and methods. Several forms of in-service help may be provided. Up to the present time we have provided help largely through credit courses offered during the summer or off-campus during the year. These methods should be continued but we also need other types of in-service programs. Specialized workshops for small groups should be made available throughout the state as the need arises. Conferences for larger groups of teachers may make for more effective use of the time of teacher educators. We need to provide more consultant assistance than we have done in the past. Several states have provided specialists in subject-matter fields as means of improving the instructional programs in local departments. The five or six men in Illinois doing this job and the 10 or 12 men in the state of Texas are examples of this type of endeavor.

It is my opinion that one of the chief causes of the departure of teachers of vocational agriculture from the field has been the workload. A recent study completed by Dr. Hoerner of our staff indicated that those teachers in Iowa who left the teaching profession did so because of work load, lack of advancement and to improve income. We have scarcities of teachers in each of our states. It is possible that we could alleviate the situation by giving teachers more help so that their work would be more satisfying to them.

Instructors are very much in need of assistance in developing program related to competencies needed in off-farm agricultural occupations. Unit and course outlines, references and instructional materials should be made available to them either by the teacher education or supervisory staffs. I will not quarrel with supervisors in regard who should provide these services. Teacher educators are associated with colleges of agriculture in most cases and have ready access to both resource persons and resource materials. The job needs to be done and if we do not add staff and do it in our teacher education departments, it will have to be done by someone else.

All signs point to greater emphasis in post-high school educational programs in the future. In practically no state have we reached more than 10% of our farmers in adult school classes. In most states we are reaching a considerably smaller percentage in young farmer classes. The development of area vocational-technical school facilities is just getting underway in many of our states. The attitude of school administrators must be changed in many cases before we will be able to develop comprehensive programs in these fields. Local school districts have been hampered financially and have been able to provide only the minimum essentials of elementary and secondary education. Our public schools must assume greater leadership in providing educational opportunity at the post-high school level. This means that we will have to up-grade our training programs, both at the pre-employment and in-service levels. Jabro found in 1962 only 17 of the 42 institutions studies that provided special methods of instruction for the young and adult farmer phases of the program. It is assumed that some instruction was provided in other courses. It has been said that there has been more new technology developed in agriculture in the last 30 years than in the 200 years previous. It has also been said that knowledge is being doubled each ten year period. This means that it is imperative that we develop vocational agriculture teachers who can help men acquire this new information and new technology and adapt it for use on their farms or in their places of business. We must assume responsibility for providing training for workers in off-farm agricultural occupations.

New directions in vocational agriculture imply some changes in criteria for the selection of students in agriculture education and also changes in supervised teaching experience. In the study made in 1962, 30 institutions required no more than six weeks of student teaching. At that time 12 departments required ten weeks or more. With increased emphasis on participating experience with adult and young farmer classes and experience in teaching post-high school technical agriculture, as well as experience in teaching off-farm agricultural occupations, it appears that the student teaching period will need to be lengthened, or a part of this training made post-baccalaureate.

Since it will be difficult to find student teaching centers that can provide all desired experiences, it may be necessary for us to send trainees to some centers to obtain certain experiences and to other centers to obtain other experiences. Multiple-man departments probably can best provide the experiences desired but may not be the best training centers particularly in states where most beginning teachers will not become associated immediately with multiple-man departments. With heavy workload in the agriculture department, it would seem desirable for us as teacher educators to do everything possible to increase greatly the number of multiple man departments.

The targets that I have enumerated in describing a new direction in agricultural education point to an expanded program of vocational education in agriculture and increased demands on the part of teacher-education facilities. Enrollments in agricultural education will need to be greatly expanded and we will need to develop programs for the certification of special instructors particularly for the post-high school technical school programs. The new direction will greatly increase the workload, both at the undergraduate and graduate level in our teacher training institutions. We will need to add staff and to retool staff. Specialists from other disciplines may be valuable additions to our agricultural education staffs in the retooling process.

To summarize, it seems to me that we need to take a good look in each of our states at our existing programs in vocational agriculture and teacher education to determine the extent to which they are parallel to the new philosophies concerning American agriculture. We need to greatly develop our research, pilot study and evaluation programs to determine the proper balance between production agriculture and training for employment in off-farm agricultural occupations. We need to carefully evaluate the curricula in agricultural education and the content of each of the courses included in the curriculum. We must greatly expand our in-service training programs to teachers of vocational agriculture both in the form of instructional programs and the supplying of instructional materials. We may need to draw upon personnel from other disciplines to meet future needs. Adult and young farmer programs must be greatly expanded and more attention given to post-high school technical training programs. With these changes and increased enrollments, we can provide adequate personnel for an expanding program in vocational education in agriculture.

PHILOSOPHY, THEORY, AND PRACTICE IN AGRICULTURAL EDUCATION

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1964

With such a title, this speech could take us everywhichaway. Since we don't have time to go everywhichaway, perhaps we better set some limitations. Better still, maybe we better try to bring to bear about as much honesty as we can stand in stating what my hope is for us here this morning. If you can add faith to my hope, maybe we will get somewhere. Following some of the instructions we give our graduate students, I will try to define my problem, maybe state the hypothesis, test it, and as time permits, try to reach some conclusions and maybe indicate some implications. Maybe I better stop the analogy to a graduate research problem right here, before some of you professors demand to question the candidate and all he has to say!

Let's get right to the major point, while you are still with me. It is this: I suggest that we in Agricultural Education have been long on practice and short on theory and philosophy. A second part of my basic argument, or hypothesis is that not only have we been long on practice and short on philosophy and theory, but that this is a major cause for most of our difficulties. Putting this another way, I am suggesting that we have worshipped the practical while ignoring or even belittling theory and philosophy. So, my purpose is to build my case by trying to validate this argument by actual cases from our history as well as our present situation. Now, again trying to be honest, I do not expect 100% agreement, but you will do me a favor if you will see if my theory is sound and my philosophy consistent.

By the way, the term "Agricultural Education" is being used in its more limited meaning; that is, at the secondary school level I am talking about vocational agriculture, while at the college level reference is to the program developed parallel with vocational agriculture. In other words, as was common in earlier days, I am speaking largely of "The Smith-Hughes Program". Later we will indicate a larger use of the term Agricultural Education, but for the present we are speaking of the traditional programs growing out of the 1917 Act. We realize that this was not the beginning of education in agriculture, but that is another story.

Perhaps we should also be clear on how I am using the terms "theory" and "philosophy", since we will not have time to explore all facets of these two broad terms. A theory helps explain a situation by close examination of the underlying causes. Thus, we are able to unify scattered results or generalizations so that we can "make sense" out of a situation. When we are able to state a theory, it is stated in a set of propositions. These propositions, ideally, meet the following conditions: They must be (1) stated in terms of exactly defined concepts, (2) consistent with one another, (3) existing generalizations could be deductively arrived, and (4) fruitful - show way to further observations and generalizations, thus increasing the scope of knowledge. Therefore, constructing a theory is not easy. It must be arrived at through creative achievement. I am not suggesting that all of us should become theoreticians, but I do believe that we could take time to see what theory underlies a practice before we jump on the bandwagon of the latest practice being promoted for everybody in Agricultural Education. More later on this requirement that everybody follow the same practice.

Now, how am I using the term "philosophy"? I go way back to Socrates for my basic thought here. This philosopher said, "The unexamined life is not worth living." So, philosophy includes a spirit of inquiry. You say that a certain practice should be followed. But I want to know why? And if you are a philosopher, you do not accept such an answer as "Regulations". In fact, the main reason that the philosopher insists on examining things is to push toward ultimate principles, which, taken together, explains the total situation. "Reality in totality", as the philosophers put it. Again, I am not suggesting that we all become philosophers in the full sense of the word, but I do believe that we should become philosophic enough to try to see the situations in which we find ourselves in a larger context that we usually see them. Certainly, as educational leaders, we can concern ourselves with causes, values, ends and philosophic questions.

In using the word "practice", I am following the dictionary definition: "Actual performance or application of knowledge; distinguished from theory". The appropriate adjective is "practical".

Now that we have done the professorial job of defining all the terms in the title, we have nothing left to do except get into the body of our discussion - so here we go.

Practice

We have tended to take a good practice and make it a doctrine. In the process we have frequently lost the basic reason for the practice in the first place, namely, learning. The theory and the underlying philosophy of supervised practice would probably stand up under any fair evaluation as sound educationally -- not only for vocational agriculture but for any other subject. However, by the time we got through with the practice as route for better learning, we had made it the one and only route that anybody enrolled in vocational agriculture could take.

The FFA developed as a supplement to vocational agriculture to make the subject of agriculture a better learning situation for the boys enrolled, adding to their development. But we made it a ritualistic, tight organization in which a boy could join only if he could recite the creed and meet certain other requirements, including a few extra local additions for good measure, all much more like a college fraternity or a lodge than a supplement to a course in high school. For fear that you think I am picking on the FFA and the high school program, we did even worse in solidifying some recommended practices in the area of adult education. If you will read almost any of the policy bulletin, you will see adult and young farmer classes defined by using the number of meetings as a part of the definition. So, we finally came to the point that we defined adult education as "10 or more meetings with 10 or more farmers". I would suggest that this does not necessarily have anything of any consequence to tell us about adult education.

Now it would be nice to blame all of this on the "U. S. Office", as we do many things. (If I must be honest, I will admit that I have done a full share of this buck-passing!) However, in some cases states have tended to make even more rigid some of the policies and practices recommended by the folks in the U. S. Office. One example will indicate that state leaders must share some of the responsibility for the over-instututionalization of some of our programs. In the old Policy Bulletin 1 (may it rest in peace!) was carried some rather specific recommendations for scheduling time for the high school classes. One of these editions listed five arrangements for scheduling classes, suggesting that a state adopt some of these. But when some of the states put out their own version, only three of these alternative plans were listed and said that "any schedule must follow one of the three".

Yes sir, we have institutionalized many of our practices, then gone to great length to enforce the practice -- forgetting that the practice started as a ways and means to reach an objective of learning.

Dozens of studies and hundreds of speeches and articles have been made about attendance in adult classes taught by vo-ag teachers. The main question has been, "How do I get 'em to come out and keep 'em coming?". Most of these studies (?), speeches and articles have been devoted to tricks of the trade or at best "How To..." approach. At least one book has been written by an Agricultural Education Professor on Successful Practices in Adult Education with the chapter headings beginning with "How To...". In fairness to the author, he says in his preface that the practices will implement "...the philosophical foundations of adult farmer education". Now the point here is not to be critical of the book on practices, but to decry the lack of one on "Philosophical Foundations of Adult Education". The author of the book on practices has not seen fit to write one, neither have I nor either have you. Furthermore, if you attempt it, the chances are pretty good that Russ Guin will tell you that he could print it but he couldn't sell it. And I believe that he is a good judge of what will sell to people in agricultural education.

The major point I wish to make here is that in all of our efforts to find the answer to the attendance problem for adult classes, we have generally overlooked completely the fact that there is a considerable body of THEORY of Participation. One summary of studies in this area took 288 pages to provide a thumbnail sketch of these studies. (Steele, 1962). It would seem that we in teacher education have also been sticking so close to our knitting in agricultural education until we have not taken time to see what is happening in other closely-related fields. Still more important, thereby failing to understand and use some of the basic theories and principles which would likely give us a sounder basis for studying attendance at adult classes, for example, than the successful practices approach.

How Theory Serves Practice[1]

Throughout history a distinction has been drawn between so-called "men of action" and "men of thought". Presumably the same distinction can be drawn between "societies of action" and "societies of thought". America certainly belongs in the former category. We pride ourselves on being "men of action"; we "get things done". We build great cities, big bridges, long highways, enormous navies, globe-girdling air forces, space-ships to other worlds. We produce refrigerators, automobiles, breakfast food, and cigarettes in wild, wild profusion. We do things. And we scoff a bit at "societies of thought" -- Chine, Tibet, ancient Greece -- where men find reward in thoughtful reflection. We are even a bit dubious of Western Europe for its loving attention to the intellectual tradition. And, finally, we visit this doubt and suspicion upon our own intellectuals -- the celebrated "eggheads" -- whom we condescendingly tolerate as necessary "freaks" of society.

No wonder that, of the two, practice rides higher than theory in most of what we do in America. "If there is a discrepancy between theory and practice, but it won't work in practice," or "That looks good on paper but it isn't practical," meaning thereby that the practical is the more trustworthy of the two and should serve as the yardstick for measuring theory. It is true that practice does just this: It checks and verifies theory. When the Progressive educator develops a theoretical idea like the "child-centered concept," for instance, the teacher can try it out in the classroom to see if it works. What he finds will condition his view of the concept.

But theory fulfills this same function with regard to practice: It "checks" and judges practice.

Always, whether we realize it or not, we are in the process of testing our beliefs through our behavior and our behavior through our beliefs. It is not so much that a particular practice specifies a particular theory, or that a theory, on paper, specifies a particular practice. It is, rather, that theory and practice criticize one another; they check and warrant one another. And since it is through a continuous course of criticism that we find our way to a higher order of activity, it is imperative to address ourselves, sooner or later, to the matter of fundamental theory.

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[1] Morris, Van Cleve, Philosophy and the American School, Houghton-Mifflin, Boston, 1961.

Theory and philosophy

Every important human activity can be shown to have a basis in theory, a centralizing idea of what it is all about, what it is trying to do, and how it operates in human experience. Physicists have their atomic theory. They can't actually see atoms or tell what they are made of. But they can make guesses (which is an informal term for "hypothesis") and if these guesses help to explain or "rationalize" (i.e. make rational or understandable) a large number of phenomena which they can observe then physicists say they have a tenable tentative theory of atoms.

So likewise in education, there is a claim to theory, to the possibility of setting down general ideas which will explain and rationalize the various phenomena occurring in the educational enterprise. And, generally speaking, the larger the range of phenomena accounted for, the better the theory.

The trouble with extended theory-building, however, is that some theories may be found to be incompatible with others. So we attempt to organize the theories themselves into a meta- (super) theory, which, in turn, seeks to harmonize, integrate, rationalize, and explain all the different conceptions we have built up to this point. It is this activity we call philosophy.

The educational philosopher seeks the single formula by which all human learning can be understood and managed. In this, he is principally engaged in the process of unification, in the endeavor to comprehend all that goes on in the educative process under a master set of consistent ideas, so that if problems come up for which ready answers are not available he can look to his theory for guides to practical action.

It is in this sense that a good theory is, as they say, the most practical thing a man can have. A teacher who teaches by impulse, like an aviator who flies by the "seat of his pants" may conceivably teach well, but when unexpected situations arise his actions are likely to be flustered and thin. With a well thought-out theory of philosophy of education, an individual knows what he is doing and why. And it is when our practical conduct becomes more and more rational, i.e., increasingly subject to critical theory, that we say it becomes more and more professional in character. The truly professional is the individual who tempers and redirects native impulse with a rational theory. It is this which the study of philosophy can help to supply.

Leadership

Some of the national leaders, or those in national offices in Agricultural Education, have generally tended to be rather conservative in their outlook. For example, here are quotations of speeches from two of these at regional conferences less than 10 years ago:

> "I believe the only justification for establishing a department of vocational agriculture and employing one or more teachers is to be able to meet the instructional needs of farmers and their sons."

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> "The degree to which progress in Agricultural Education is safeguarded and further developed, may determine in large measure the outcome of this race for technological supremacy. With the rapid increase of populations in foreign countries, as well as our own, the very existence of our people may be at stake within the next 25 or 50 years, unless our agricultural progress keeps pace with the times.
>
> "At the present time, (1955) it is my opinion that one of the most important safeguards for progress in agricultural education consists in holding the line and in preventing the program from retrogressing or slipping backward. This may sound very elementary to some, but for most of us I am sure it will require careful planning, cooperation, leadership and a lot of hard work. Why do I take this position? Simply because I have seen evidences on all sides for the past ten years or more, which indicate a more or less nation-wide trend for the National as well as State levels to dilute, submerge, integrate and lower the standards of vocational agriculture. This has been manifested in various ways, such as:
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> 1. Giving consideration to the idea of including training in "Related Occupations" as one of the major objectives of vocational agriculture under the provisions of the Smith-Hughes Act.
>
> 2. Over-emphasizing professional training in educational subjects at the expense of training in technical agriculture and farm mechanics. In fact, I sometimes feel that so much emphasis is given today to pedagogical subjects in our teacher training program that some folks would prefer to have an incorrect agricultural practice taught properly and correctly than to have a correct agricultural practice taught improperly. While neither alternative is desirable, if I had to make a choice between the two, I would most assuredly choose the latter.

> "Finally, I say in all seriousness, and in the light of present day trends, that unless we get together and re-dedicate ourselves to the task of re-instating and maintaining bona-fide vocational objectives and standards which will insure a farmer training program of which we can all be proud, it will not be long until ear-marked funds (both State and Federal) for vocational agriculture will be but a pleasant memory."

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Such expressions of leadership reminds one of the rather cynical definition of The Leader Who Failed: "He misunderstood the past, he miscalculated the present, and ignored the future". Most of the people in Agricultural Education are dedicated people. This is especially true of those in leadership positions. In fact, some of us have an overdose of dedication. Now the trouble with an overdose of dedication is that it often leads to a doctrinaire attitude toward the job that stands pat on the status quo while assuming that he is putting more into Agricultural Education than anyone else. It seems to me that each of us is putting about the same, namely, our lives.

Another closely related characteristic of ours which needs some further study is our great concern for years of service. I do not here refer to the practice of honoring a person upon reaching retirement; this is an entirely different matter, in my opinion. I refer to the practice of mixing years of service in with dedication and rewarding a person for these as if this is always "good". If fact, a common practice among us is to award certificates or keys to 30-year men or 20-year men. I'm not questioning the awards, you can give a certificate or key for any reason you wish. The objection is to the implication that this is "good" for Agricultural Education as well as for the recipient. I would suggest that this is another practice that will not stand up under scrutiny. There is a real possibility that Agricultural Education would have benefitted with fewer years service of a particular recipient. Before you decide that I am hard-hearted and cynical, permit me to say that in at least one state, the sponsors of the 20-year key program requested that the basis for awarding keys be changed to include some results in the communities where all these years of service were given.

Well, you ask, "If you are so smart as well as cynical, what sort of leaders do we need?" Thank you for asking the question. I will be glad to try to answer it. This is not original with me, but I like the Five Senses of Leadership:

1. Sense of Perspective (Overview)
2. Sense of Direction (Where are we going?)
3. Sense of Responsibility (Decision-Making)
4. Sense of Confidence and Security (Even in change)
5. Sense of Humility (I need your help)

In a lighter vein, I like this one: "We don't need experienced men as much as we need some who can do things that have never been done before."

Apparently, one of the first qualities of a leader, especially in these rapidly moving times, is to be able to develop new ways to solve current problems. Often these current problems are basically the same old problems but they are in new circumstances. This calls for different approaches. The same old solution which worked well at another time will likely not meet the present needs. In fact, an almost certain recipe for failure in solving current problems is to use out-dated ways and means. This is why the leader who insists upon continuing on and on in the "tried and true" ways soon becomes a protector of the past rather than a leader of the present.

A second quality of a leader seems to be that of developing "the art of the possible." By this is meant to "see" what is possible in a given situation. This means combining theory and practice. Understanding what "should be" is an essential first step. This is necessary so that the leader will be operating at the highest level. Start here, not with "the facts." The second step calls for a realistic look at "what is." The real leader then combines the ideal with the practical in arriving at the best possible solution.

Still another quality of a leader is that of seeing the potential in others. He looks for potential more than past record. He sees the person in the job ahead rather than emphasizing past accomplishments. Not how long he has served, or even how well, but what are the prospects for the years ahead? Some people in leadership positions lack this quality. Sometimes it is said that they are poor judges of people. They cannot visualize how a person will do in a given situation. This is particularly difficult if it is a job differing from the one in which the person has experience. For example, when a teacher of agriculture becomes a supervisor, the qualities which made him a good teacher may not be the same as those which are needed to be an effective supervisor.

A leader of today must possess the quality of respect for the other fellow. No leader can do it all, in any organization. He will not see ways of using ideas of others in arriving at decisions of importance to the group unless he has respect for individuals in the group. The leader must remember that assuming a position of leadership (supervisor, chairman, etc.) does not automatically make him a leader. The status position of leader will sustain him for a while, but he must possess some qualities of leadership if he is to prevail as a leader.

Many other qualities are needed to be a leader, one other will be mentioned here. He must be able to look ahead. To see how things will be in the future is not easy. It is not really possible, of course, but the real leader must be able to make a good estimate.

If he is not able to see any further than anyone else, he fails to be the needed leader. This takes broad understanding of all the pertinent factors affecting the group of which he is the leader.

Our policies have tended to make us look to ourselves for all of our resources and exchange of ideas. For example, part of the reimbursement requirement for enrolling in many programs has kept the flock highly selected. This reminds me of the old Puritan Verse which read,

We are the chosen few.
All other will be damned.
There is no room in Heaven for you.
We can't have Heaven crammed.

Instead of isolating and insulating ourselves, I believe that we should try to involve others in vocational education at every possible opportunity. Especially should we look to the basic areas of sociology, philosophy, economics and psychology for much needed help. Only in psychology have we tried to secure help, and most of that was probably due to certification requirements. In our own case, we have received invaluable help from Professor Selz Mayo in Rural Sociology. Not only in helping us learn how to do community study, but helping us develop with our students, undergratuate as well as graduate, a "research approach" to their work that has been of great help to this, regardless of the area of educational leadership they have pursued. We in Ag Ed just simply cannot do everything that must be done in these days.

How Do We Teacher Educators Use Philosophy, Theory, and Practice?

If I am honest, I must admit my bias here in saying that we have not gone as far out in our emphasis on practice as have our co-workers in other areas of Agricultural Education. Perhaps even if this is to be considered "good", it may have happened more as a result of circumstances than by any special intent on our part. Most of us have been in graduate school at the doctoral level. This means that we have spent a considerable number of hours in the stacks of some of the best libraries in the country, whether we wanted to or not. With all that reading, it is to be expected that we would come up with some ideas not held by those whose work has caused them to go places other than the library. I suggest that if there is anything at all to advanced graduate work, that this difference should be present and evident in our work. Otherwise, why go to graduate school in the first place, if it makes no difference in you and your work?

However, as indicated elsewhere in this paper, understanding theory does not automatically result in implementing in terms of practice. So, again trying to be honest as well as philosophical, I must admit that we too have leaned heavily upon practice, tried and true, even at times without examination of the theory and philosophy underlying the practice. We have been particularly slow to change a practice which has served well through the years. May I remind us of a few of these, even though it would be more pleasant to leave these sacred cows alone. The specific question is, how well do we make use of theories of change in making changes within our own areas of teacher education? Let's take a few specific examples.

Let's look at the theory of planned change. How well do we function in the role of change agent on our campuses as we seek to secure needed changes in the Ag Ed Curriculum? Are we aware of all phases of social action involved in making changes? Do we know who the legitimizers of proposed programs are? Do we know how to actively involve people at their level of participation in making the proposed changes? Speaking of curriculum and change, how much as the Ag Ed Curriculum changed in the past 10 years? How different is student teaching now than when you were a student teacher? We talk a lot about change, but it is frequently how the ag teacher of agriculture, or -- but not too frequently do we look in the mirror with the Ag Ed program. In our own professional improvement, how do we rate? If you feel that my argument for more theory is sound, how well are we equipped to deal with the following:

Role Theory

Self-Concept Theory

Vocational Maturity Theory

Theory of Participation
Theory of Group Development
Theory of Social Action

An honest confession means that I must admit a preponderance of little jobs that take too much time, but seemed to be important to somebody who seems important to me. You may have similar difficulties. But at least we could resolve to read Educational Theory, Harvard Educational Review, Teachers College Record, Research Journals, as well as our own Ag Ed Magazine and AVA Journal. I may be wrong, but I believe that if anyone is to keep some philosophy and theory in Agricultural Education, it will be the teacher educators' responsibility.

What Is The Future of Agricultural Education?

Trying to apply the basic theory of change to a program so close to us is not easy. We get a feeling that a change is bad. That we will lose by changing. "Stand up for Vo Ag" and "Don't Let 'Em Push Us Around" seems to be the thought of some. Only recently I heard a state leader express this by saying that he didn't mind working with other areas but he didn't want the others to think that ag was being submissive. Well, this is one view, but I believe that it is a view that will get us nothing except a back seat -- if any seat at all in future educational programs. I subscribe to the theory that if we are to be part of the future that we must deliberately see ourselves in the future. Furthermore, that this projection will in all probability be in a quite different setting. To me, it is not realistic to admit readily that agriculture and education have, are, and will be changing very rapidly, yet to expect vocational agriculture -- part agriculture, part education -- to remain the same. I do not believe that this would be desirable even if possible, which I doubt. So I believe that we must force ourselves to become philosophic enough to "sit back and take an objective look at the past, present and future in education and agriculture and see where vocational agriculture did, is, and will fit into the picture." To do this, I suggest we must be able to get rid of the trappings first, the sideshows next, so that we can then really examine what is under the big tent of vocational agriculture as an educational program. If you cannot rid yourself of the trappings, or even admit that there are trappings, then you can't follow me here. If you consider everything we do as important, essential, and necessary to an educational program, then you will stick with the ship, either going down with it or sailing triumphantly in the harbor proving that some of us are false prophets.

Let me try to use a few examples or cases to try to illustrate what I am thinking. Only a few years ago the North Carolina State Y.M.C.A. served a very wide and valuable service on the campus. The "Y" was the center of student activities from pre-orientation through mop-up after graduation. The only long-distance telephone service was handled by the "Y". In the early days, the "Y" secretary helped coach some of the varsity sports. A few years ago came the Student Union, taking over much of the work of the "Y". The college administration took over many other responsibilities, such as self-help program. (In fact, an Assistant "Y" Secretary was moved over to the college administration to carry on some of his same activities.) You know the story; it happened on many campuses. Some thought that the "Y" was finished. Had its day. Most of the activities had been taken over by others. This could have happened, but we were fortunate in having leadership that could see the "Y" in a new role. In fact, if you could visit the "Y" now, you would probably agree that it is now functioning more as a Y.M.C.A. than in the previous years with so many varied and encompassing things to do. Incidentally, to indicate the still changing dynamic nature of such a program, the "Y" started a much needed International Student program which will soon be taken over as a college function. In fact, you could conclude that the successful "Y" program is one that develops a good thing and turns it over to the college to continue to operate!

The next illustration comes from the business world. In Wilson, North Carolina, there is a company called The Hackney Body Works, a prosperous company for many years. Some of you older farm or agri-business boys (agri-business is nothing new) will remember that the first time you ever saw the word "HACKNEY" was on the side of a wagon. They sold wagons all over the country. They're still in business but they don't sell many wagons anymore. The last time I was there the big business items were bus bodies and refrigerated trucks. If they can keep their leadership looking ahead, you younger folks will probably have the opportunity to purchase a HACKNEY MOON BUGGY one of these days. You see, they are in the body business for transportation - not the wagon or bus business as such.

The other illustration I want to give is in vocational agriculture. There were five departments of vocational agriculture in a rural county. These departments had been a major part of the high school program in these schools for many years, practically all the boys enrolling for one or more years during their high school days. Adults were enrolling in all of the departments. Considerable pride seemed to be held for these programs. About five years ago these five schools were consolidated into one high school. The teachers of agriculture played an important role in the consolidation movement, working with the adults in their respective communities in making the change to the larger school. Considerable community study was made by these teachers. They also put forth much effort to develop a dynamic five-man department of vocational agriculture in the new school. A visit to the new department would seem to reveal clearly that a good job had been done. Through specialization, the teachers felt that they were all better teachers than in the separate schools where they did all the teaching in all areas. Well, to make a long story short, within the few years already past, the five teachers became four, the four teachers became three, now they are two. Many reasons for this, and this is not the place to discuss them. The major point of the story is that this rapid reduction of teachers has happened with little or no protest from anyone in the school district. I could safely predict that if one of the teachers in one of the schools before consolidation had been dropped that a protest would have been heard all the way to the state capital. In fact, we have had just such cases in previous years. But in the new setting they slipped away practically unnoticed. To me, the moral to the story for our purposes here is that we as leaders were not able to help develop as important a place in the new setting as the teachers of agriculture held in the old setting. Of course, there is the possibility that this could not be done, but obviously it wasn't.

I would like to use these illustrations as a basis for an analogy for us in our discussion here this morning about the future of vocational agriculture. I believe that it has a future only to the extent that we can re-orient our thinking to really "see" an important educational role in the future and help others see this too. Of course, I do not know what this future will be. However, I believe that some reasonable projections can be made if we can be fairly accurate with some of the assumptions upon which the projection is made. I believe that this is the basic theory of any projection.

First, I believe that the story of the Y.M.C.A. on the college campus is a sound analogy here. That is, I believe that vocational agriculture will have a smaller place in the high school program of the future. Smaller with respect to number of teachers and number of students, and certainly in the number of departments. However, let me hasten to add that "smaller" does not mean of less importance. Again using the example of the "Y", one could easily make a case that much of what the "Y" is now doing is of more importance than some of the service activities performed in previous years. It seems clear to me that vocational agriculture did try to do more than was possible to do adequately all through the years. Certainly other sorts of vocational education will be made available where only vocational agriculture and perhaps home economics has been made available before. We might even see someone else get interested in helping high school students develop their ability in speaking or in parliamentary procedure, so that the ag teacher would not be compelled to do it. One of the needed educational services we might take on would be helping the farmer who is not making a good living to find his way to developing some abilities needed to supplement his income from off-farm sources.

New Concepts

Some of us will need to get friends in other areas to help us take a new look at Agricultural Education and Vocational Education. It will not do to patch up the old concept and call it new. We need some new concepts. We cannot develop these if we spend all of our energy fighting defensive battles, particularly if these battles should be only minor skirmishes. Again, I insist that some philosophical thinking and study of theory becomes necessary. This is why I say that such thinking may come from outside our own group. For example, take a look at Kimball Wiles, national leader in curriculum and administration. The following illustrates his thinking in the area of vocational education.

VOCATIONAL EDUCATION FOR ALL*

Start With Purposes of People Rather Than With The Jobs

It is time for those planning secondary school curricula to cut to the heart of the problem and redefine vocational education, even though in the process many current beliefs and prejudices will be challenged.

The definition should be very simple. Courses used by a student to prepare for an occupation should be considered vocational education. The difficulty has arisen when attempts have been made to classify courses on the basis of jobs rather than student goals. Training programs for a few occupations in agriculture, business, and industry have been prepared, and these have been designated as vocational. What about the thousands of other jobs that American youth will enter? They, too, are vocations. The courses in which youth develop competencies to use in these positions are vocational also. It is obviously impossible to start with the jobs and prepare and present training programs leading to each without endless duplication. The only feasible way to start classification of courses as vocational is in terms of the purposes of the pupil and to so classify them on the individual's program rather than in the curricular organization of the school...

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* Wiles, Kimball, The Changing Curriculum of the American High School. Prentice-Hall, Englewood Cliffs, New Jersey, 1963.

Vocational education for a given student consists of the courses a student chooses to further his vocational objectives... Under this approach, vocational education should be a required part of each pupil's program but planned individually to meet his purposes... If this concept of vocational education were accepted, much of the bickering and argument that have developed between vocational and general education would be eliminated.

Under this concept of vocational education, the curriculum is divided into two major sections - general education (required of all) and specialization. Specialization consists of vocational and avocational.* Some of you will not agree with me, but I believe that we are putting too much hope in Agricultural Occupations as the solver of all of our problems. My guess is that for the teenager the idea of adding other agricultural occupations to farming as his goal in adult life will bring on more problems instead of fewer. This is a dead-end street as a specific training objective, just the same as farming. (Bear in mind now, that we are talking about the teenager, not the adult.) Maybe the Agricultural Occupations offer a little wider street -- maybe even an avenue -- but still dead-end for the young teenager insofar as selecting an agricultural occupation for his life's work. Why? Because it is contrary to sound theory for a 14-year old to choose an occupation for life. If you don't believe this, go to your library and read all you can find on vocational maturity, vocational development, occupational choice, and career patterns.

Now, please understand that this is not an argument against the idea of including Agricultural Occupations other than farming in teaching programs and supervised practice. This is a great addition and is in agreement with my understanding of the theory of vocational development and maturity. But the study and practice in all Agricultural Occupations including farming at the early teenage level is largely exploratory as to occupational choice. Such study also serves as an excellent way of learning the application of many principles -- science, math, economics, etc., heretofore largely confined to a sometimes dull classroom.

May I suggest an underlying reason that we find ourselves in this dilemma is the well-intended but overworked use of the term "future". Of course, we should be interested in the future, that's all I can see that we have before us. My philosophy includes the notion that educational programs should "look to the future". However, this does not mean that everything we do now with a 14-year old boy in school is dependent upon what he will be doing as an adult 20 years from now. I believe that you will agree with this. Yet, many leaders interpreted the major -- and to some the only -- objective of vocational agriculture as preparation for life as a farmer. Stepping in once more where angels fear to tread, I would suggest that the name Future Farmer gets us in trouble before we get started. Why tie our hands with that title "future"? There is no need of naming the Science Club a Future Scientist Club. If you can't come up with a more dynamic name, why not settle for plain old Science Club. If you must have something fancy, call it the Atom Busters. But don't label it Future Atom Busters. Some of you have Collegiate Future Farmers of America Chapters, but I suggest that you have a difficult time explaining this name to anyone on your campus who does not already know what it is. What I am arguing for is a closer look at the theory of vocational maturity and development and bringing our programs in line with these findings. This would mean more "here and now" in all programs and less of the "sweet bye and bye" -- more existentialism, if you insist! Applying this idea to our present structure for vocational agriculture in the four high school grades, the emphasis would look something like this:

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* Wiles, Kimball, The Changing Curriculum of the American High School. Prentice-Hall, Englewood Cliffs, New Jersey, 1963.

9th Grade - Introduction to Vocations
Understanding the world of work and self-attitude toward work, including individual projects

10th Grade - Agricultural Occupations
Including supervised practice

11th Grade - Agricultural Science and Technology, including supervised practice

12th Grade - Agricultural Business and Technology, including supervised practice

In the area of adult education, I believe that we must get into the business in a larger way, or get out. Other groups are getting into adult education, putting the time, effort and support in it, when many of our programs still make adult education a fringe activity, usually after a full work day for the teacher. I have always had difficulty understanding why some of our leaders were so concerned that we enroll only those who were planning to farm, yet have so little concern for those already farming. I believe that an Ag teacher needs to have one-half or more of his working hours officially devoted to adult education if he is to do any at all.

The local program of vocational agriculture will be a part of a formally planned local program of vocational education. A Local Plan will be the official tie between the state and local similar to the State Plan bridging the state and national.

What about the FFA in years ahead? Some have said that I am opposed to the FFA. This is not the case. I was born too soon to be in FFA when I had my four years of vocational agriculture. However, as a teacher, the FFA was the vehicle I used to rehabilitate one vo-ag department. I am convinced that FFA activities have served to "open doors" for many boys. However, I believe we have outgrown the need for the blue jacket and many of the contests. Some argue that these are our best means of publicity, the "show window" for vocational agriculture. I agree. However, I do not believe that it is the picture we want to give to the public. The idea of a uniform and ritualistic fraternity-like initiations must go. These things are symbols of selectivity, with a trace of snobbishness. If we really believe what we say when we say that the FFA is an integral part of vocational agriculture, then it must lose its exclusiveness and include automatically every person (boy and girl) enrolled in vo-ag without memorizing the creed, going through what is frequently a rough initiation.

This will take time. Such changes may never occur. Apparently some would prefer to see the FFA die and be laid out in the blue jacket rather than make any changes. In the meantime, I believe that immediate steps need to be taken to loosen the grip on the FFA organization at the national, state and local level. I contend that the present setup prevents the FFA organization from being the boy organization that we seem to like to say that it is. I will not take time to document this change, but you can do this if you are interested by looking at the national constitution, and the membership of the national FFA boards. Not even one teacher of agriculture serves on these. One other interesting point is revealed in the document prepared by the National FFA Office for National FFA Officers.[1] As I read it, this nullifies much of the notion that our top FFA boys are leaders and thinkers. The suggestions in this document include directions for everything except "Don't spit on the floor". May I quote two suggestions from this page document for National FFA Officers?[2]

"Avoid philosophizing when you are speaking by not using the phrase 'I think'. Talk about your farming program, accomplishments of outstanding FFA members, or other topics of greater interest to those to whom you are talking."

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[1] A Handbook for National FFA Officers. Printed by the National Future Farmer, 1963.

[2] Ibid.

"Stay out of arguments that are controversial, especially when the topics relate to farm issues, government policies, political issues, racial situations, etc. (You have been informed as to how to discuss or avoid situations of this nature.)"

To make these points even more interesting, the booklet closes with Edwin Markham's wonderful lines, "In vain we build the world, unless the builder also grows."

My contacts with a considerable number of national officers over the past 30 years cause me to say that such suggestions are useless if not insulting. As a group, these young men are better able to meet and talk with people on issues of the day than are some of us. This effort to control the conduct of these top leaders is another indication of the fallacy of the claim that this is a boy organization. In fact, these national officers are not helpless boys but are young adults in the prime of life and fully capable of looking after themselves. One wonders if the fear is for the FFA as an institution as seen by the National FFA office.

The role of the supervisor will change, I hope, so that his major function will be that of serving as a resource person for local people planning their programs of vocational education. He will no longer consider himself as "head of all agricultural education in the state", supervisor and evaluator of it all. This will not be necessary when adequate communication is available to others concerned.

Let me mention the national level, and close with a look at teacher education. I believe that if Agricultural Education is to continue in any sense as we have known it, there must be better communication from the U. S. Office to all those in state leadership positions in the field. That is, if the U. S. Office wants to have any part in Agricultural Education programs out in the states. It is inconceivable to me that anyone would hope to serve in a national leadership role with as little means of communication as has existed during the past several years. Even those on the mailing list from Washington get very little communication of consequence other than the formal, legal documents. No newsletters, notes of information, or any other efforts toward communication. Furthermore, most of us in this audience aren't on the mailing list anyway. This might not be a major calamity, but the Men from Washington do drop by to see us as they are in the states, frequently wanting to see the Dean or someone else at the college and it would make it a little easier to know about their plans before they got there.

Now for a searching look at us in teacher education in the years ahead. I see us changing from Professors of Agricultural Education to Professors of Vocational Education or Professors of Education -- or, if you please, just Professors, assigned to whatever area of teacher education is our specialty. If we can become more research-minded, I believe that our field work will increase and that we may become much closer to the teachers and local administrators of vocational education in the field. Pilot programs and other developmental programs will necessitate closer association. By the way, in our interest for better and more sophisticated research (both of which we need) I hope that we do not get the statistical sophistication at the expense of directional research; yes, even philosophical research, with which I know some of you will not agree. By the way, as important as research is and as much as we need to try to overcome the shameful neglect through the years, I would remind you that no amount of research can "tell us what to do". Research cannot solve problems of this type. This is a human problem. A creative problem. A problem for leaders. "What should we do?" is a philosophical question.

The undergraduate curriculum in Ag Ed will be more flexible. You will abandon the intriguing but impossible idea that "everyone must get something in everything in agriculture". Specialization or concentration will not only be permitted but encouraged. All Ag Ed courses will be problem-centered and research-oriented. Student teaching will be reduced in the four-year programs to carefully selected experiences, and a 5th year of paid internship will be developed, probably a "4 plus 1" type of program similar to the MAT programs already developed. Some of us will become the Clinical Professors that Conant and others are talking about.

A rapidly developing role for teacher education in all areas of vocational education is to develop graduate programs at the masters and doctoral level for further developing leadership for the rapidly expanding vocational-technical programs at the post-secondary level. I believe that this is a team job and cannot be done by any one of the old branches of vocational education. I believe that my own graduate program would have been better with less Ag Ed. This is not a criticism of any of my Ag Ed professors at any of the three institutions where I did graduate work. In fact, pictures of four of these professors plus my two ag teachers when I was in high school make up my "Ag Ed Hall of Fame" in my office. You will be interested to know that I heard Dr. Hamlin say that he was glad that he got his doctorate before they had one in Agricultural Education! More and more I believe that we will be calling upon the sociologists, psychologists, economists, and others to help us develop the leadership we desperately need for research, development, and teaching in all areas of vocational education.

To make such programs available to more able and deserving people, we will have funds for as many graduate assistantships the year-round as we can secure able people. Ours will be more like some other areas, illustrated by a note from the University of Illinois where more than 400 graduate students were enrolled in agriculture, 60 percent of them receiving financial support from Experiment Station Funds. Now, finally, we have some similar funds for research, development and training in vocational education. I hope that we can learn how to use them effectively. I have some concerns on this point.

Finally, I believe some of you younger men will be preparing papers on Philosophy, Theory, and Practice in Agricultural Education. Ten years from now I believe that there will be more papers published on the subject than there has been in the last ten. It is my hope that this paper might serve as a beginning of a continuing dialogue on the place of philosophy, theory and practice in Agricultural and Vocational Education. If so, then Russ Guin will see the possibility of a book in this field, some of you will want to write it, and we will have a solid base from which to develop effective educational programs in a dynamic changing and challenging future. If we cannot do this, then we will find ourselves as teachers as did the old schoolmaster in this old, yet appropriate verse:

"Greeting his pupils, the master asked:
    What would you learn of me?
And the reply came:
    How shall we care for our bodies?
    How shall we rear our children?
    How shall we work together?
    How shall we live with our fellowmen?
    How shall we play?
    For what ends shall we live?
And the teacher pondered these words, and
sorrow was in his heart, for his own learning
touched not these things."

- Anonymous

TEACHER EDUCATION - TOMORROW

S. S. Sutherland
Chairman, Department of Agricultural Education
University of California, Davis
1963

We have at our University a program in which certain professors are invited to speak before student groups and to give what is called "his last lecture on earth". I have prepared my presentation to you this morning somewhat in this climate since, according to your custom, you seldom if ever invite anyone to appear before you twice. Therefore this should, in reality, be my last lecture to this group. I should like, in the time alloted to me, to do two things this morning; first, to view with some alarm a situation which has some implications for teacher education in agriculture today, and to take a look at tomorrow and the challenges it should bring to those of us who have the responsibility for preparing teachers of agriculture for our public schools.

Not long ago in California we acquired a new Chief of the Division of Instruction in the State Department of Education, and our State Director of vocational education thought it would be good orientation for him to visit some departments of vocational agriculture in our high schools to see the kind of instruction that was being done. An itinerary was arranged. An entire day was set aside for this and several departments were visited. Imagine the chagrin of the State Director when, in not one of these departments, did they see a single case where the teacher was teaching; where they saw any formal instruction in agriculture. Not a single class! Planning for some Future Farmer activity, yes; doing many of the little chores which occur around the department, certainly; but no teaching. I'll confess I don't know to what extent this is a problem in other states, but I'm convinced that in our state many of our teachers really don't spend much time in teaching.

There was a time when I was convinced that our agriculture teachers, in general, were the best teachers in the school; that they used the most progressive methods, in the very best sense of that word; that in the use of problem-solving procedures, the use of community resources, the fine utilization of the supervised farming programs and the individual instruction that accompanied them, their personal knowledge of each boy and his home situation, and their sincere interest in teaching agriculture, they were really ahead of the parade. In proof of this, I have heard school administrators in meetings where the problems of preparing high school teachers were being discussed stand right up in the meeting and say: "Your problem is very simple; just train all your teachers the way they train teachers in vocational agriculture."

I'm led to wonder if today we can say that our agriculture teachers are the best in the school, and say it with the same confidence that we could ten and twenty years ago. I wonder if, indeed, our teachers spend as much time as they once did planning, arranging for, and actually teaching; if formal instruction in agriculture and individual on-farm instruction looms as large in importance in the eyes of the teachers as it once did; if, in relation to other teachers in our schools, they use as modern methods as the teachers now of mathematics, science and languages. As you well know, within the last decade, we have had hundreds of thousands of dollars expended for improving the teachers of biology. Similarly, extensive assistance has been given to improving the teaching of mathematics, social studies, foreign languages. Now, as a result of these vast projects, we have language laboratories, improved facilities for science teaching, special institutes for upgrading teachers of foreign language, math and science, and coincidentally with this, much use in the academic subjects of team teaching, coordinate teaching, teaching machines, closed circuit television, ungraded classes, and other modern techniques.

Now the question arises "What have we done to improve instruction in agriculture as compared with what has been done in these other subjects?" I submit that the agriculture classroom and equipment today look much the same as those of twenty and even thirty years ago. We even have some of the same charts on the walls. We use much the same teaching methods. Oh, I realize that the slide projector, the moving picture projector may supplement the textbooks and bulletins that we once used; that our high school texts, our state and federal bulletins, are certainly improved, but it just seems to me that we are falling behind the parade in adopting some of the good teaching procedures of our colleagues; or, if not lagging, at least we are losing our leadership.

Now let me add another dimension in the same pessimistic mood, and that's the dimension of time. I'm just old-fashioned enough to think that the first job of a teacher of vocational agriculture is to teach, and to teach agriculture. I'm just not too sure that the typical teacher spends as much time as he might in this rewarding activity. I don't know what the situation is in other states, but in California we never drop any activity once it has been accepted by our teachers of vocational agriculture. As a result, we have the state final judging contest and two other contests that are almost statewide in nature, and in these contests we have the judging of livestock, dairy, poultry, milk, entomology, agronomy, two farm mechanics contests, land judging, vegetable crops judging and tree judging. These are agricultural contests -- but this is just the beginning. In addition, we have a cooperative quiz contest, public speaking contests, local, regional and state; a parliamentary procedure contest, a supervised farming contest, various foundation award contests, local parent and son banquets, field days, fairs, local and regional officers' training conferences, regional and state conventions. Indeed, one wonders when our teachers find the time to teach. Lest my attitude be misunderstood, I want to make it crystal clear that I believe each of these activities has a real value; a real educational value. They contribute materially to the development of agricultural leadership. I subscribe to the tenet, or to the principle, that the curriculum of the school is all of the activities which that school provides for its students, but I also believe that there is such a thing as balance and I'm just afraid that, in many schools, we have a very large tail wagging a very small dog. So much for today.

As I have listened and participated in the planning of expanded vocational education programs which may be implemented as the result of new federal funds, there appear to be certain principles or guidelines which may have an important effect upon agricultural education in the future and upon teacher education as well.

1. Additional funds apparently will go to those forms of vocational education and to those subject fields in which there is a demonstrated need for expanded occupational preparation.

2. Additional money will not be forthcoming automatically to support present programs of vocational education in agriculture already established and underway.

3. With the possible exception of minimal allotments to thse already established programs, federal funds accruing to the states will no longer be earmarked for specific subject fields as has been the practice in the past.

4. The lines of demarcation between the agencies as we have known them will doubtless be less distinct and may disappear entirely. So, likewise, there may be less distinction between whether instruction be agriculture, business, distributive education, industrial education, or what-have-you, the important thing being that it be vocational education and preparation for an occupation in which there is a dmonstrated need for such preparation.

If these come to pass, let us look for a moment at their possible implications for the teacher education in agriculture. It seems evident to me that one obvious inference that can be drawn is that the teacher of the future will need be trained first as a vocational educator and secondly as an agricultural educator; that the single teacher of vocational agriculture in the small rural high school, the general practitioner, will in the future need to be trained to organize, develop and supervise work experience, not only in off-farm agricultural occupations, but maybe in other occupations, in addition to providing the usual type of vocational education in agriculture for those who would farm. This general practitioner, as I choose to call him, must probably be trained to recruit, train and to assist lay teachers of adult classes; be prepared to handle larger classes of high school students and still do his job of teaching and of supervising practice activities; be able to utilize more lay assistance; be prepared and trained to work as a team with other vocational educators in business, distributive and industrial education in his school. In short, he should be a generalist in his technical knowledge and a specialist as a vocational educator, who calls upon and utilizes persons with special skills the same as does the general practitioner in medicine. Also, he must be trained to think in terms of curricular matters and curricula, as well as in terms of his own courses in agriculture.

In fact, we have too long overlooked the obvious truth that the real stumbling block which prevents and has prevented many of our lower ability students from profiting from their studies in agriculture, and from becoming really employable, is the inability of many of them to read, write and do simple arithmetic. Why haven't we recognized this and trained our teachers to team up with other teachers in organizing special classes to remedy this?

In the field of research, an immediate study needs to be done in terms of the statement made by Benjamin Willis at the national seminar last summer when he said, and I quote, "We don't know enough about the aptitudes and interests of today's children and young people with little academic persuasion. We often view them as strangers in our midst." In this connection, do we know and can we determine what the lower IQ limit is for the student that we are attempting to prepare for the job of operating and managing a modern farm? I note, in the last issue of the Vocational Journal, that in business education they're setting this at 90 to 94 IQ, and you and I both know we have plenty of students in our classes today whom we are trying to prepare for agriculture, and who are below this standard. Another related problem: what is there in the literature, what is there in the studies in educational psychology, that will give us some leads as to the special methods which should be used in dealing with these lower aptitude students? This is information that we are going to need, and need sorely, as we move into dealing with youths and adults with special needs, the handicapped and the underachievers.

Now let us turn for a moment from the professional needs of these teachers, and take a look at their technical preparation. How are we going to obtain people with the preparation needed to teach specialized courses at the high school level in the fields of ornamental horiticulture, nursery work, forestry and similar fields? What technical preparation will be needed and how can we provide it for teachers at the post-high school level who will handle programs for the highly specialized training of technicians and for the many service occupations? If, as has been charged, teacher education in agriculture has lost its growing edge and has settled down into a comfortable rut, it appears to me that we are liable to be shaken out of this rut rather rudely as we look toward the challenges of the future. As we see these new challenges, it appears to me that we may also expect to find ourselves in an entirely different climate in the colleges and universities in which we work. Already, one can sense a trend toward fewer courses in education; a climate which places more emphasis upon subject preparation and less upon "methodology"; higher institutional requirements in the field of general education for our teachers; more emphasis upon an extended period of directed teaching and less dependence upon formalized courses and methods; a phasing out of the practical production classes in agriculture and substituting for them more courses which are essentially applied biology and applied economics. One might be led to wonder whether the environment provided by our agricultural colleges will continue to provide a favorable climate for the preparation of down-to-earth vocational teachers.

Lest you label me as unduly pessimistic, since I've concerned myself almost entirely with the problems which I can see emerging, let me hasten to reassure you right now, for I am far from pessimistic. Indeed, many of the problems which I have enumerated we have already faced and are finding that they have solutions. For example, in North Carolina, present teachers of agriculture -- the general practitioner that I have talked about -- are being retrained and trained to offer introductory courses in vocational education in rural schools; not agricultural education, but treating the entire world of work. We are already establishing, in our California junior colleges, courses for technicians in highly specialized fields and have found that the training of these teachers is adequate to cope with these new developments; that they are capable of working with advisory committees in setting up these programs; that they are conditioned to reinforcing their own knowledge by bringing in instructors from the field to aid in specialized phases of instruction. It has been found that with a minimum of additional training our teachers of vocational agriculture move into such specialized fields as ornamental horticulture and, in a short time, develop the competencies necessary to teach these courses. Neither does the shift from supervising the usual run of farming programs to that of organizing and directing supervising work experience programs seem to faze our teachers. One of our former vocational agriculture teachers in California is coordinator of directed work experience for an entire county. Another has just recently been given the position of director of work experience for an entire school system. In short, I do not think that we face a crisis, nor do I think the problems which I have enumerated, and the others that I'm certain we haven't dreamed of as yet, will not be surmounted.

One compensation for advancing years (I might add, about the only compensation) is experience, the ability to look back over quite a span of time, and to recall how periods of trouble and periods of crisis have been met and survived. In the 42 years that I have spent in vocational education in agriculture, we have met many so-called crises. Therefore, to quiet my own fears and to reassure myself that the problems involved in our new and expanding programs will doubtless be similarly met, I decided to go back to the presentations made at some of these breakfasts over the past years.

Here is a quotation from one of them: "The future of vocational agriculture in the United States will depend on what we, as teacher trainers, do for the young men in our classes in the next five or ten years." When was that said? 1963? No, nearly 30 years ago in 1935. We survived that one.

Another quote -- "The duties of agriculture teachers are now multiplying, often almost beyond human endurance." The date on this -- 1942.

Still another quote -- "What groups do we intend to serve? Prospective teachers of agriculture, yes. In these days, however, we must think of teachers for many types of schools and classes for a variety of purposes; teachers of agriculture for city use perhaps as well as vocational study; teachers in technical institutes and junior colleges; teachers in types of special vocational groups and classes related in any way to agriculture." Could that have been said in 1963? No, in 1943!

Still another quote -- "We face a new era, very different from the old. There will be unprecedented rewards for those of us who can fit into this larger program, but some of us will go under because we shall be unequal to the demands." That should have been 1963 also; it was 1944!

Each year, as we have gathered at AVA conventions, we have heard speakers state that vocational education is at the crossroads; our very existence is threatened; but somehow or other, in the twelve months between these meetings, the problems of the year have been surmounted or have vanished, and some new problem has taken their place. It is for us, rather, to look upon this new legislation and the programs which it makes possible as perhaps the greatest opportunity that vocational education in agriculture has ever had, and the only limitations which may be placed upon the way in which we take advantage of these opportunities are the limitations of our own imagination, our own ability to plan and to meet them. I don't think there has ever been a period that was more exciting, more thrilling, in the opportunities which it holds to do a real job of preparing youth, high school and post-high school, the adults, the disadvantaged, for occupations in agriculture. We may do it differently; we may be called upon to justify, more than ever before, support for new training programs which we wish to establish; we may find ourselves working in fields other than what we consider strictly agriculture; we may find ourselves teaming with other vocational educators, and offering courses which erase entirely the lines of demarcation which once we thought sacred. We may find a changed climate in our land grant colleges. We may find continuing and maybe increased difficulty in recruiting the teachers which we will need for these new programs, but I see nothing that leads me to believe that all this is impossible. What was the motto that was popular in World War II? "The difficult we do immediately; the impossible takes a little time." Perhaps the most heartening thing is to look around and see the young men present here who now staff our teacher education faculties, who will spearhead the drive to meet and surmount the problems that I have identified. Those of us who are characterized primarily by bifocals, bridgework, baldness and bulges, can say with certainty -- or at least I can -- that I am the poorest prepared, poorest trained member of my teacher education staff. Even with our (in comparison) inadequate preparation, we have met and solved in our way difficulties comparable to these. There is no reason to expect but what those who come after will do far better than we.

TEACHER EDUCATION IN AGRICULTURAL EDUCATION
AN APPRAISAL AND SOME CONCERNS

Rufus W. Beamer
Head, Department of Vocational Education
Virginia Polytechnic Institute
1962

Dr. Lawrence D. Haskew, Vice-Chancellor of the University of Texas, presented a paper at the 1961 Centennial Convocation of the American Association of Land-Grant Colleges and State Universities on the Evaluation of Teacher Education in Land-Grant Institutions. The paper was based on a study Dr. Haskew had conducted and was read to the deans of the schools and colleges of education making up the Land-Grant Association. In his appraisal of teacher education in the Land-Grant institutions, Dr. Haskew had some things to say about teacher education in agricultural education which I hold to have some significance to our profession. Some of the things he had to say hurt, but in my judgment, pose some implications for strengthening our programs.

Here are some excerpts from Dr. Haskew's paper.[1]

> "The greatest contribution of the Land-Grant Institutions to teacher education stands today in partial eclipse. This contribution is the education of teachers of agriculture and homemaking and, to lesser extent, of trade and industrial education. In the fabric of an urbanized, intellectualized, sophisticated world these mundane designs are being embroidered over as rapidly as possible, or shoved into a corner in the hope that Mr. Jacques Barzun or the National Council for Accreditation of Teacher Education will not notice them. But in the warm light of an appraisal based on having a job to do and getting it done, the clean, crisp, utilitarian lives of those designs still display the signature of true art.
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> "I submit that no subjects have ever been better taught in American high schools than the subjects of agriculture and homemaking; that no contingent of teachers have ever equalled the teachers of agriculture and homemaking in command of their specialized subject matter; that no more effective curricula --

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[1] Lawrence D. Haskew, Centennial Convocation Paper: "Evaluation of Teacher Education in Land-Grant Institutions," November 14, 1961, St. Louis, Mo.

> effective, that is, in achieving the purposes they avowed -- have been designed than those in these two fields; that no set of teachers has kept more abreast of technological and scientific contributions; that no teachers have reached higher average attainments in methodology; and that no teachers have ever made more direct contributions to the improvement of adult community life than have the teachers of agriculture and homemaking. Here is teacher education that begins in the high school, extends throughout college years with display of directed laboratory experiences most other divisions are still trying to emulate, fits the student to his job, goes right there with him and practically forces him to continue to be a student."

Dr. Haskew says that this story is one of the brightest in American education, and may be the finest that the Land-Grant Colleges and Universities will ever write. But he indicates that the story is incomplete. "It is incomplete because it has been written rather than being in the process of writing."

Dr. Haskew's impression is that the sense of crusading, inventive search does not come through now (as it once did) as one talks to agriculture and homemaking educators; it does not emerge from the "whither now" documents produced in their conferences; it does not show up in many school classrooms. He says that in its place is an aura of rote, almost a sainted credo, and that maybe there is being enacted one of the perpetual tragedies of teacher education, the tragedy of lively form congealing toward lifeless formality under the pressure of past success and present weariness.

The fact that Dr. Haskew would highlight teacher education programs in agriculture and homemaking as the Land-Grant institutions' greatest contribution to teacher education should cause all of us to take pride in a great accomplishment and in a great contribution. However, the fact that his appraisal indicates, or implies, that teacher education in agricultural education reached the threshold of greatness, then became weary, lost its cutting edge (its zip), and started a slide toward mediocrity, should be of real concern to members of our profession. It should bring forth a challenge in each of us; should cause us, individually and collectively, to seek rather precise answers to questions such as these: Why did we become weary? Assuming that we did, why did we lose our crusading spirit? What happened to keep our greatness from moving on with the times? Now, I recognize full well that it could be argued that our teacher education programs are stronger today (or at least as strong) than they have ever been; that they still display the signature of true art; that our cutting edge is still sharp; that Dr. Haskew's appraisal is more provocative than factual, but for our own professional stimulation why not assume that his appraisal, while a bit subjective, contains certain elements of fact; that the appraisal is intellectually honest and straightforward.

Assuming then some validity to Dr. Haskew's appraisal, what happened?

I am sure there could be many theses developed as to what happened (if something happened). One thesis might be that we (as a profession) failed to keep up with the times. We failed to keep our programs moving forward with the socio-economic trends and the needs of a changing economy, including a changing agriculture. State and National objectives and guides were developed in the late 20's and early 30's which were quite in keeping with the needs of those days, but these objectives(with minor changes) were still giving direction to the programs in the 50's and 60's. During this period a revolution, attributed to science and technology, was constantly bringing about changes in our societal and economic structures. We were either unaware of these changes, chose to ignore them, or failed to get their full significance for agricultural education programs. This situation continued to a point where we were devoting too much of our time and energy to yesterday's agriculture. Times changed and we failed to change with the times and thus for a brief period (historically speaking) we lost the opportunity for continued greatness. Perhaps a lull in progress can be expected in the development of teacher education. Certainly there is the universal difficulty of maintaining a cutting edge on educational endeavors. But the purpose of appraisal and analysis is to locate difficulties and to chart direction -- to offer leads to strengthening programs. So, on the basis of Dr. Haskew's appraisal, and my own beliefs about teacher education in agricultural education, I would like to discuss with you in a very brief way four things with which we in teacher education should concern ourselves in the development of future programs.

1. We must show greater concern for change and the nature of change which is going on in the world.

2. We must show greater concern for research with appropriate emphasis on basic research.

3. We must concern ourselves with new programs as well as the strengthening of existing programs.

4. We must concern ourselves with the competency and commitment of our personnel and institutions.

Concern for Change and the Nature of Change. The world is changing in a startling fashion, and at amazing speed, and these changes are having and will continue to have a tremendous impact on every facet of American life -- including American education and American agriculture. And it is the speed of change that presents us with difficult and far-reaching educational problems. Margaret Mead was referring to speed of change when she said: "No one dies any longer in the world to which he was born." The geometric progression of accomplishment in scientific research and technology is the dominant feature of our lives. Unlike most of our predecessors we will never have the opportunity to become fully adjusted to the world as we know it before we have thrust upon us new ideas, new methods, and new products which change our way of life again and again. We can now predict with a fair degree of certainty, if we can avert a nuclear war, that the decade ahead will bring a tremendous increase in the world's population, a continuation of severe international political competition and conflict, a continuation of international economic competition, and a vigorous emphasis on public education as a means of solving the problems emerging from these situations. The most important single problem facing all segments of agriculture and agricultural education is that of making reasonable adjustment to change. Many young people of today will, in their lifetime, enter occupations not in existence today. This has real implications for the training of occupations -- it will become increasingly difficult to train for occupations per se. So, it becomes imperative that people in our profession understand change and concern themselves with it. Dealing with change involves how to knowledge and how to knowledge is a specific responsibility of teacher education.

Concern for Research. Research is so essential to the advancement of sound educational programs that it can no longer be neglected or given a minor role. We cannot have sound teaching programs unless these programs are based to an increasing degree upon sound and comprehensive research, both as to methodology and subject matter. We have been saying this for a long time, but the void in most of our institutions in research effort directed toward solving agricultural education problems is a black one. It stands out like a dark gray cat in a coal mine. We desperately need to improve our research effort, and we need to direct some of our effort toward basic research.

One can identify many areas in agricultural education where basic research might uncover some new and far-reaching ideas. An area that has been in my mind for sometime is the competency approach to program development or course building. Basic research in this area might very well give us a scientific approach to curriculum development in the broad field of educational pursuit. We all know that our present tools for building curricula are not very sharp or scientific. Perhaps our newly established National Center will be able to help us to get moving in this area.

Research is the vehicle which must carry education to genuine advancement, and it must be research of a pioneering nature.

New Programs and the Strengthening of Existing Programs. We must make a greater effort toward providing the type and character of instruction which would largely eliminate the factor of obsolescence in knowledge growing out of the rapidity of technological change. Perhaps outdated knowledge may be made less harmful by placing more emphasis on education in the basic principles and less on skills and practice; by placing emphasis on process as well as product, in keeping knowledge up-to-date by teaching students to remain students throughout their lifetime.

In our effort to strengthen existing programs we need to give greater emphasis to the science side of agriculture at all levels of instruction. We need to take a long, hard look at the influence State and National contests, and the accompanying awards, are having on our high school instructional programs. Do teachers select instructional units for their courses because of their worth in helping all students develop needed abilities, or do they select units that will enable a few selected students to participate in contests set up by the State and National FFA organizations under the "guidance" of adult advisers? There are people in our ranks who believe (and not without supporting evidence) that the emphasis we have placed on contests and awards in our FFA programs has served as a major deterrent to sound program development in vocational agriculture. The teacher who spends 25 to 50 percent of his teaching time preparing for and entering contests will not be engaged in teaching the kind of agriculture that meets the needs of our time. Furthermore, there is much evidence to indicate that winning FFA awards (State and National) will have little or no influence in keeping a local board of education from eliminating vocational agriculture from the curriculum of a school.

We need desperately to strengthen and extend our post-high school and adult education programs. Agricultural education has pioneered in the field of adult education but, for some reason, we have never been able to exploit our opportunities in this field. Why have we not been able to move in this field? We need to know the answer to this question because the need for this type of education is growing, not diminishing. There is no way for people to remain productive in our economy without continuous efforts in education. So continued study is going to be a way of life. The opportunities in the field of adult education are unlimited and deserve from us a maximum effort, and this maximum effort should be in terms of action.

We have heard a great deal in recent years about agri-business, about adjusting our teaching to the educational needs of the total industry of agriculture rather than to farming alone to which our present programs are largely oriented. We might best make this adjustment, provide this instruction, by teaming up with the people in distributive education in some type of cooperative arrangement. These programs could be initially undertaken on a pilot or experimental basis. The research aspect of such programs would not be neglected. These programs could call for preparing teachers who could serve effectively in rural and suburban communities in vocational agriculture and distributive education. Distributive education has had a great deal of experience in distribution, marketing and management, and would be in a position to give invaluable help in developing instructional programs in the agri-business area of agriculture.

Our teacher education departments have a great opportunity, and perhaps an obligation, to contribute to the development of agricultural education in the so-called underdeveloped countries of the world. We have in the past given some assistance to these countries, but in terms of meeting their needs our help has been a drop in the bucket. There is outstanding opportunity for service in this field, but it will require real professional commitment. It will also involve pioneering.

Competency and Commitment of our Personnel and Institutions. Someone remarked recently that none of us would like to have a sick child treated by the honor man in the Harvard Medical School, class of 1940, if he had learned nothing since then. I believe this statement holds some implications for the leadership in agricultural education. We will not make our maximum contribution to teacher education unless we can have competent and committed personnel working in all phases of agricultural education -- teacher educators, administrators, and supervisors, and teachers, and we will not have competent personnel unless each person in each of these groups continues to learn and to do this with sort of a passion. The teacher educator will not be very effective in developing in his students the attitude for continued study if he himself stops learning after getting his appointment to a position in teacher education. The supervisor who does not continue to be a student as evidenced by advanced degrees, attendance at state and national workshops, etc., will be in no position to help teachers improve their instructional programs. He may be a positive deterrent to the development of sound programs even though he puts in long hours and much effort.

The task of improving agricultural education in this generation demands new ventures. Our leadership must be sufficiently competent and committed to bring about the modification of laws, to solve problems of financial support, to bring about massive changes in programs, to create new and improved images. Are we in teacher education making inventive contributions to the emergence of this kind of leadership? Are we in teacher education committed to pushing up the norms, pushing back the horizons, or are we committed to compliance, to pretty much the status quo, to meeting certification regulations as established by the State Department of Education? The difference between commitment and compliance has real implications for teacher education.

In summary, I should like to say that I have never been so optimistic about the future of vocational education in agriculture, or about vocational education generally, as I am today. I think that we are now in the process of regaining that cutting edge which Dr. Haskew indicated we seemed to have lost momentarily. I think the period of 1950 to 1960 was sort of a crisis period in the historical development of agricultural education, and that we are now emerging from this crisis with opportunity that should challenge the best in all of us. I am confident that teacher education in agriculture stands at the threshold of its greatest recognition, encouragement, growth, and opportunity in history. I am also confident that we will make the best of this great opportunity - that our commitment will be genuine.

THOUGHTS ALONG THE WAY, AND THE WAY

Howard W. Deems
Professor of Agricultural Education
University of Nebraska
1961

It is with a humble feeling that I stand before you as the speaker at this traditional American Vocational Association breakfast for teacher trainers. Previous speakers made contributions that tended to guide our leaders along the unchartered road called Vocational Agriculture.

Back in 1939, Professor Aderhold of Gerogia insisted that our agricultural instruction should be centered around the careful and systematic study of the economic, the human, and the natural resources on the farm. Truly that has been a corner post to sound instruction for the past 20 years.

Professor Alexander of Texas in 1936 stated, "We must promote more research in our field... We cannot crystallize our philosophy and our practice without having the benefit of the features of other's programs." That speech aided in establishing our research program.

You old-timers will, I am sure, never forget that great talk by Professor Hamlin of Illinois in 1944; his subject: "The New Role of the Teacher Trainer". Those were, as many of you remember, trying and troubled times, yet Dr. Hamlin outlined a progressive post-war plan for teacher trainers that proved to be sound.

Many of you heard or read that down-to-earth, grassroot-type talk given one year ago by Professor Byram of Michigan. His development of the subject, "Challenges of the Golden Sixties", boosted our concern for human betterment and established another benchmark in the field of professional cooperation and usefulness.

Historians tell us that the 20th century is destined to be the fastest moving period of all time. These same men inform us that this period appears to be dividing itself into three parts.

During the first third, from 1900 to the thirties, we unhitched the horse from the buggy and cranked up the Model-T. We got off the ground in crude flying machines. We discovered vaccines that prevented certain diseases; we started sending messages through the air and called it radio.

You know the story of the middle third of the twentieth century - you have been part of it. We unlocked the atom, put two-ton capsules into orbit, and entered into a period of casting aside colonialism.

We send pictures through the air. We discuss seriously traveling to the moon. But the important thing for us, the teacher trainers of America, is another statement of today's historians. They say, as the middle third of the twentieth century was a much faster moving period than the first third, the last third, 1966 to 2000, will be much faster, more exciting, more daring, than the period in which we now live. And we, fellow educators, are training men who will teach at the vertex of this period.

Today we live in an involved society. Because of this some would have us believe that teaching is a difficult and puzzling profession. However, others look at it differently. They say if education is complicated, it is because educators make it that way. The poet who said, "The things I find of greatest worth are just the simple things on earth", might have been referring to teaching.

I have discovered that the laws of learning and the principles of great teaching that have held solid down through the years and will, in my opinion, be the cornerstones of great teaching in the period just ahead, are just the "common things" in teaching.

Sometime during the next century historians may stop and evaluate the vocational movement of which we have been a part. And when they do, I am quite sure they will say, "This group of educators of the 20th century used, refined and made practical the law of learning that applies to knowing and understanding the students being taught." They will explain and make it sound like a great benchmark in the upward climb of education, they will glorify the trips of the vo-ag teacher to the farm, the visits with the parents, and the in-the-home conferences with students.

It was during my first year of teaching that I experienced a disclipline situation that made this law of learning very real to me. One of my students was a husky farm boy who would, on certain occasions, "cuss" during a shop or class period. My teacher education courses in college had stressed the point that such was not proper. So, from time to time, I informed the lad that he must not do such things in class. One afternoon, after a rather loud outburst of profanity, I grabbed him by the collar and in a loud, angry voice, told him if he ever "cussed" again in class he would be kicked out of school. That frightened him and things went along quite well for several weeks.

Then one afternoon, he was working at the forge, wearing a pair of rather loose-fitting coveralls, unbuttoned in front. He was not a skilled blacksmith, and as he worked on a bar of hot iron, one small piece chipped off and hit him. As it went sizzling down his hairy chest, "cuss" words flowed freely into the smokey air. All other students were quiet. They remembered my threat. The only thing that I could do was to take the young man by the hand and show him the door. I will never forget watching him walk slowly down the road toward home. I had a feeling that perhaps I had made a mistake.

At four o'clock I jumped into my Model-T Ford and drove out to the farm where he lived. The father, the mother, and the young son were seated around the kitchen table. I tried to break the ice by commenting on the weather, but it didn't work. Finally the father said, "So, you kicked Bob out of school today." I answered, "Yes." After a long silence another question pertaining to the reason was asked. I tried to explain that Bob had "cussed" in class. I had hardly finished my brief explanation when the father jumped out of his chair, struck the table with his fist, and with a stream of profanity, far beyond anything I had ever before heard, explained that if I didn't want Bob to "cuss" in class he would see to it that he didn't. I expect young Bob knew many of the words his father used with such proficiency long before he ever heard about the ABC's.

That is the part of the story that emphasizes to a degree the importance of knowing students. The second chapter accentuates the lasting values of such matters. As you have perhaps guessed, young Bob returned to school. I can also report that he is today a very prosperous businessman. Years later while visiting about this occasion, Bob remarked that on his way home he started building up a hatred for his teacher and the school. He had decided that if they thought him crude and rough, he would show them, he would become the toughest guy in the community. My not knowing the home conditions of this student almost cost America a good citizen. Take a moment and figure the difference between a useful life and a delinquent. In this case it could have amounted to over one-third of a million dollars.

Down through the years, we in vocational agriculture have been quite successful in making the vo-ag student an active participant in his own education. He plans along with the teacher many of his educational experiences. His personality, the influences of his home, his neighborhood and his social level are all taken into consideration. These personal relationships are important in bringing about desirable changes. Knowing the student cannot be over-emphasized.

The Great Teacher of 2000 years ago, Jesus Christ, taught by the principle of understanding and love. Just a few months ago the camel driver from Pakistan visited this country. Because it was a public relations activity, many gifts were presented to him. What impressed this humble, simple man from the East? It was the smiles, the love and the understanding of the American people.

If a teacher believes it is important to know, understand and love every student, he must also believe that every student has "value" and "worth". As educators it is our task to develop teachers in such a manner they can see behind the freckles and beneath the uncombed hair.

The story of an old philosopher and his grandson illustrates the point that I want to make. The two were strolling through the garden one evening. The grandfather picked up an apple, then took from his pocket a knife. He cut the apple in halves, and from the core he plucked a seed which he cut into parts. Then he called his young grandson and asked, "Sonny, what do you see inside this seed?" The little fellow looked and then replied, "Nothing." Then the old philosopher leaned back and said, "Sonny, where you see nothing, there dwells a mighty tree."

Unfortunately in my own teaching experiences I have been, on several occasions, like the young grandson. I looked and failed to see. One case still haunts me. It happened in the late twenties. One lad in my Junior-Senior class wanted to build for his big shop project a ditch-digger. He started with the bullwheel and a drive-chain from an old binder. All semester he worked, welding and bending iron, figuring different drive arrangements and assembling. At the end of the semester his machine was not completed. My grading score card stated: "40 points on completed project". His was not completed. He flunked the course.

About twelve years later a large factory started building ditch-digging machines. Throughout the country today, digging machines are used. And the machines use the same principles of construction this young farm lad was striving to apply in my vo-ag shop. Today this farm lad, who as a youth had unlimited imagination and perhaps a real creative mind, is not as successful as he should be. It is partly my fault. I should hasten to add the "Vo-Ag" as a course does allow for imagination and creativeness. I think one reason why vo-ag students achieve in college far above their expectations is because of this overlooked "something" in education.

Today it is important that future teachers of vocational agriculture encourage creativeness. It should be also pointed out that one learns to be uncreative by responding to requirements, following specific directions and waiting to be told what to do. The great clergyman, Preston Bradley, said "I have never doubted that God created man for great purposes nor that man has the potentiality within himself to achieve God's goal for him."

Every man has value and worth, but teachers-to-be must be reminded that some have talents along one line and others in an area entirely different.

I will never forget an "educational gem" that I watched develop during my high school teaching days. At that time the faculty held staff meetings at six-week periods, just before issuing grade cards to students. On this particular evening we were discussing a lad named Jack. The English teacher had just announced that she was about ready to flunk him in English; I was just ready to say that Jack was to receive the highest grade in my vo-ag class. We argued for a while and then the English teacher closed her remarks by saying, "In my book, Jack is the dumbest kid in school."

About three weeks later we were holding an FFA meeting in the "Ag" room after school. Some of the boys had crowded their cars in around the building in such a manner that the English teacher could not get her car out. She knocked at the door and informed us of the situation. I turned to the Sentinel, who happend to be Jack, and asked him to help the lady. He was back in a moment, the task completed. As he took his seat he remarked to the group, "That is the dumbest teacher I ever saw." Both the English teacher and Jack were perhaps right in their statements about "lack of ability". Will Rogers said, "We are all dumb, only in different ways."

Men in the field of vocational education have always realized that schools do not exist to classify people or to eliminate the unripe. Instead, each person is a resource of the community, and it is the school's function to develop that resource as far as possible.

Now may I take just a moment and bundle up this thing we have been talking about. If a vo-ag teacher will know, understand, and love his students, realizing that every boy is some mother's son and has value, then perhaps the students will, in turn, apply that great principle of brotherly love in his home, his community, his country, and his world. It is my opinion that our hope for a progressive twenty-first century is tied very closely to the principle of learning that implies the knowing and understanding of people.

It was Thomas Jefferson who said, "It is the manners and spirit of a people that preserve a republic in vigor." I know of no more certain way to preserve our national vigor now than by deliberately cultivating and inspiring each individual so that he can achieve the attitudes, the skills, and the knowledge necessary for the maximum realization of his potential. This intention must become the prevailing spirit of our schools.

Vocational agriculture has played an important part in other notable educational achievements of the past half-century. The problem approach to teaching, the motivation of individuals through organized activities, and the involvement of the student in the learning process, could all be discussed with pride, if time permitted.

Now let us do an about face and look to the future. As I dream about the sixties, the seventies and the twenty-first century I am reminded of a story they tell about Robert Louis Stevenson. It was evening time, his supper was on the table. After several calls young Robert replied, "Mother, I can't come. I'm busy watching the lamplighter punch holes in the dark." There is still much lighting to do along the way.

Some authors today find it quite profitable to attempt, through articles in national magazines, to punch holes and light the way for future programs of education. Unfortunately too many just punch.

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The April issue of Fortune Magazine carried an article by Charles E. Silberman on the "Remaking of American Education". In this article he stated, "Tomorrow requires something that the world has never seen - masses of intellectuals." The idea is a noble one and I only wish the schools possessed that magical power. It is easy to write about intellectuals and excellence, but articles and talks do not develop a program. We do not arrive at such noble goals merely by demanding them or by working longer hours. This morning I have three specific suggestions that I want to toss out for your consideration. They are not new, just reconstructed ideas.

Before doing this I want to list one assumption and express an opinion. First, the assumption: I am assuming that vocational agriculture is just one phase of agricultural education offered by the secondary schools of our land.

Now, the opinion: I am inclined to believe that today when we consider vocational agriculture we are apt to put too much emphasis on "agriculture" and not enough on "vocational".

It is quite possible that down through the years we have allowed this great vocational family of ours to divide into separate rooms with solid walls between us. This arrangement may not be sound for vocational education in the sixties and seventies. I do not pose as one with power to predict; I can only suggest certain changes that should perhaps be considered. Would that I could foresee as some of our great men of old. Perhaps some of you recall the words of Alfred Tennyson written 100 years ago:

For I dipt into the future, far as human eye could see,
Saw the Vision of the world, and all the wonder that would be;
Saw the heavens fill with commerce, argosies of magic sails,
Pilots of the purple twilight dropping down with costly bales;
Heard the heavens fill with shouting, and there rain'd a ghastly dew
From the nations' airy navies grappling in the central blue;
Far along the world-wide whisper of the south-wind rushing warm,
With the standards of the peoples plunging thro' the thunder-storm;
Till the war-drum throbb'd no longer, and the battle-flags were furl'd
In the Parliament of man, the Federation of the world.

Now, three ideas or suggestions that I believe will help the program of vocational agriculture keep pace with the rapidly changing design of farming and at the same time contribute to the improvement of teaching.

First, vocational agriculture for both high school and adult students must be taught throughout the 12-month period. This, I admit, we have been doing in a somewhat unorganized way since the start of the program in 1917. However, many states have been slow in organizing the summer program in such a way that it is definitely a part of the entire year's work with school credit allowed for the high school group.

It is the height of folly to study, for example, irrigation during the winter and then not observe, study, and discuss the practices carried on in the community during the summer. I am aware that the founders of our great program had an answer for this problem. It was the supervised farming program and for a period of twenty years or more it worked. But the technological changes taking place in agriculture for the past decade have made this practice inadequate. Regularly scheduled classes for both adults and the high school group must be organized on a 12-month basis.

Today in educational circles we hear much about improved utilization of school facilities and teachers. An extended school schedule of from forty to fifty weeks per year is here or almost here. We in the field of vocational agriculture again have the opportunity to show the way. Back in 1917 we started a program that demonstrated to all how to involve the student in the process of learning. Now we can demonstrate how year-round instruction on an organized basis can increase our efficiency of instruction.

I would like to suggest a second change. Discontinue Vo-Ag II, III and IV as regularly scheduled classes as we have in many schools today. This to be replaced on a 12-month term by specific units of instruction such as "tractor maintenance", "producing Grade A milk", "raising certified crops" and "farm accounting". The hours scheduled for study and instruction might vary from week to week or from month to month. The amount of credit received in agriculture would be determined by the hours of class and individual instruction received during the entire year.

To be most effective, this type of vocational training should be preceded by one year of general agriculture and one year of vocational agriculture given in the junior high school or in the ninth and tenth grades and paralleled with practical courses in science and mathematics. It is realized that some schools might have difficulty in adjusting to such a schedule. However, I understand the "Trump Commission" in its four year study to determine how to make better use of staff time in secondary schools has recommendations that are just as difficult to implement. As an example, the new Ridgewood High at Norridge, Illinois has put all of the Commission recommendations into operation. Here the class schedule calls for pupils spending on the average, 35 percent of their time in large group instruction, 30 percent in seminars and laboratories and 35 percent in individual study.

We in vocational agriculture must conduct an intense self-examination. We are learning rather rapidly that many of the old ways of conducting programs are not necessarily the best ways. New methods of organization must be tried, refined and reworked until we find a plan that will meet the needs of 1962 agriculture.

The present organization of our program was designed for the general type diversified farm. We are living in a period of specialization. Today the feeder-farmer handling 5000 cattle each year may have little or no interest in many of the other enterprises of the community.

The implications changes in agriculture may have for education could perhaps be brought into focus by just looking at some of the statements being made by good farmers today. Swine producers are saying, "If I can control diseases I can make it with hogs." Wheat producers insist they know production practices but have questions and problems about marketing. Corn growers are asking, "How come you talked about production practices all through the fifties and and didn't explain to us about storage procedures?" Then they proceed to tell about their city cousins and the fortunes they made in storing corn and other grains.

Many farmers will say, "I can teach my boy to raise 150 bushels of corn per acre but I cannot teach him to keep farm accounts", or "I can teach him to plow and harvest but I hestiate to instruct him about some of the farm chemicals", or "I can explain about producing livestock, but I have trouble interpreting marketing trends". One last statement, one we are just starting to hear, goes like this: "How come you spend so much money in establishing and operating agencies and so little in teaching farmers how to use and benefit from them?"

In brief, I am saying the vo-ag program must be reorganized so that students take only the units they want and need. We must teach less but do a better job in the units covered. We must have a program that can be adjusted to changing conditions as they occur.

It is not my purpose here this morning to explain the details of how this organizational plan might work. As a matter of fact, I do not know. We have not tried it in Nebraska. But I am sure our program of vocational agriculture must be pruned. We must cut away the unproductive areas. We must turn out a quality product in an efficient manner.

The third matter that I would like to discuss as we plan for the future is the use of resource people, or as some like to term it now, team teaching.

It is common knowledge that American agriculture is in the midst of a great technological revolution. It is impossible for regular vo-ag teachers to keep informed and up-to-date in all phases of this rapidly changing industry. National and state leaders in vocational education are searching for ways and means of keeping teachers informed. Workshops, in-service conferences, short courses, news releases, and other procedures have all been tried. They help, but do not entirely meet this need of keeping teachers up-to-date.

It appears that to cope more adequately with the vast growth of knowledge in agriculture, a different educational approach must be tried. It is quite possible that the use of "team teaching" will provide the modernization of instruction needed in the field of agriculture today.

This past winter I talked with many farmers in various parts of the state regarding their specialized ability and their willingness to share their information with high school and adult students. One young lad with whom I talked was a graduate of the College of Agriculture with a major in vocational education. He taught veterans for a few years while getting established in farming. I asked him if he considered himself to be a specialist in any one field. His answer was "Yes, irrigation." He then explained that he had attended many regional, state and district meetings on irrigation and had tried to keep up-to-date by reading. He expressed an interest and a desire to assist the local vo-ag teacher in an instructional program.

Another farmer was a breeder of purebred Herefords, a national leader in production testing, and an expert showman.

Others included producers of certified grass seed, breeders of disease-free pigs, leaders in soil and moisture conservation, officers in Co-ops and good general farmers.

I am confident that within a radius of ten miles of any vo-ag department there are farmers, specialists in some type of livestock or crop production, willing to act as members of teaching teams. Other groups of men who might be included as part of a teaching team in a vo-ag department are local specialists in conservation, irrigation, electricity, credit, marketing and management. The State's college of agriculture is a source of top-flight help. Most of these staff members are paid from tax funds and have an obligation to assist local farmers and future farmers. If the demand for help from vo-ag departments becomes too great, it is possible that such teaching might have to be in the form of planned trips to the college campus or through talks and demonstrations on television.

It is realized that a plan as outlined contains certain elements of danger. It may appear to some as de-emphasizing teaching methods. To others it will present an obstacle to the development of two- and three-men departments. It is also possible that the local vo-ag teacher will find himself training teachers rather than teaching farmers and future farmers. Other hazards could perhaps be listed.

However, on the positive side of the proposal are many salient features. It is, in the opinion of most people, impossible to keep up-to-date today, in all areas of agriculture. Farmers and future farmers want the best possible new information available. They have little interest in second best or last year's advice. The addition of agricultural specialists to a teaching staff should increase the quality of information presented.

The average vo-ag teacher is to some degree a specialist by training, in classroom teaching, program planning and in the development of individuals. However, he must spend so much time in reviewing literature in agriculture and attending workshops where late agricultural information is presented that he has little time to really practice his profession or to improve upon his limited ability.

William Clark Trow of Michigan says that current controversy and talk about education is nothing but a series of struggles to adapt the school program to the needs of a dynamic civilization. The many editorials we read about agricultural education and the talk we hear about drastic changes on the Hill in Washington are all part of the struggle alluded to by Trow.

Many of us are pleased with some of the trends. There is so much to know about agriculture today, we must be efficient and we must keep in step with the practical side of science in agriculture. Individual differences must be taken into consideration. We must make maximum use of people with specific skills and abilities. Students, both high school and adults, must be taught to solve problems today not only to survive but to guarantee a strong society tomorrow. It is true that more emphasis will be placed on training students to find and evaluate facts and reach their own conclusions, for we know full well the problems solved in the classroom today will not be the ones faced in ten or twenty years. I maintain the only sure way to plan for a strong future is to develop men and women who can cope with the problems of the time. If our educational program has been right, these same people will be able to solve the problems of tomorrow even though they are more complicated.

It was almost a half-century ago that a group of dedicated agricultural educators started making plans for the program we now call vocational agriculture. They were daring enough to advocate and defend a few simple practices and procedures they knew would improve instruction in agriculture. Such topics as two-hour class sessions, twelve-month employment of teachers, home projects, the problem approach in teaching, young farmer and adult classes and practical farm mechanics were discussed. Decisions were reached. A program was outlined; they lighted the light that showed the way. That group of men and the men who followed had the courage and the ability to put into practice many things that other educators just talked about.

Today we have the opportunity to again lead the way. The Trump Commission explains that secondary schools of the future will not have standard classes meeting five days each week and that some aspects of learning will be presented by specially qualified teachers. They also point out the closer relationship between students and teachers.

I insist that we in vocational agriculture are in that peculiar position whereby we can demonstrate with ease the modern trends in education.

The ideas I have presented here this morning are not necessarily new and untried. Every proposal or suggestion may be found today in some vo-ag department. The purpose of making these proposals is not to establish a specific plan for the future. The aim is rather to stimulate study and thought with the hope of improved organization and teaching.

In conclusion, I would like to recount a story about Ben Franklin. I read this some years ago in the Sunshine Magazine:

> When Benjamin Franklin wished to interest the people of Philadelphia in street lighting, he didn't try to persuade them by talking about it-- instead, he hung a beautiful lantern on a long bracket before his own door. Then he kept the glass brightly polished, and carefully and religiously lit the wick every evening at the approach of dusk. People wandering around in the dark saw Franklin's light and came under the influence of its friendly glow. To each one it seemed to say: "Come along, my friend! Here is a safe place to walk." It wasn't long before Franklin's neighbors began placing lights in brackets before their homes, and soon the entire city awoke to the value of street lighting and took up the matter with interest and enthusiasm.

CHALLENGES TO LEADERSHIP IN AGRICULTURAL EDUCATION IN THE GOLDEN SIXTIES

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1960

The program committee hit upon an attention-getting theme when it announced that at this convention we should consider agricultural education in the golden sixties. I interpret this as an invitation to take a critical look at objectives and programs of the present; to engage in constructive thinking about ways and means of bringing about needed adjustments; and to identify problem areas and issues that should be studied and dealt with in planning for the future.

I accept this implied invitation, with the limitation that my remarks will relate only to vocational agriculture. This is so that I may be able to raise some questions concerning the leadership in our profession that should be charting vocational agriculture of the sixties and beyond, and to make an assessment of the nature and quality that seems required of these leaders in terms of personal attributes and competencies.

In beginning this discussion by referring to adjustments in vocational agriculture, it is recognized that improvements have been, or will be suggested by speakers here this week. A logical question to pose at this session of teacher educators is, what are some of the practical ways and means for building quality into on-going programs. Certainly, each of us could, if given time, suggest many ways of implementing these ideas. Only a few of the more obvious will be mentioned here.

Adjustments To Be Considered

First, it seems clear that a search must be made for ways and means of more extensive utilization in teaching of pertinent technological developments in agriculture. Last year the Federal Government spent over $30 million on agricultural research. This was matched more than three to one in the states. The fruits of this research are being harvested and placed on the educational market at an ever increasing rate. You are well aware of how important these ever-accelerating advancements are.

Many of our leaders are studying this problem of adjusting instruction in agriculture to new technology, and are telling us about what they are finding. For example, in a recent issue of The Agricultural Education Magazine, two studies that are related to this problem are reported. Thompson of California studied the extent to which farmers made use of advice from agricultural businesses for fertilizer recommendations. On finding that only one-third of the farmers surveyed knew the kind and amount of fertilizers to use he raises the question whether a better job could be done in teaching fundamentals of soil and plant nutrition to farmers and sons of farmers. It is axiomatic that their teaching cannot extend beyond their own knowledge. Deyoe of Illinois reports that, of 30 selected teachers he interviewed, the more enterprising ones were conducting local surveys, making use of a wide variety of sources for keeping abreast of developments, and studying opportunities for establishment in farming. Teachers' number one problem, as reported to Deyoe, was "acquiring the 'know how' about recent changes in agriculture" and second was securing up-to-date references and teaching aids.

Many states are working out effective means of narrowing the subject matter gap. These include in-service conferences, short courses, workshops, and graduate courses, previews of new publications, and preparation and dissemination of recent informational releases to name only a few. A recent development in Michigan may be of interest here. Our Department of Information Services of the College of Agriculture decided that dependence on published bulletins alone for the new subject matter is too slow for this jet age. So for the past two years there have been fewer new bulletins, but these are being supplemented by what are called Fact Sheets of more current, newer technical information. After two years of trial with county staffs of the Cooperative Extension Service, these are now also being made available without charge to all teachers of vocational agriculture in Michigan who have requested them. Sets of 146 of these were distributed this fall through in-service education meetings of teachers. These Fact Sheets are indexed and filed in a large, attractive, specially built and lettered cover, purchased by local schools through the state association of teachers of vocational agriculture. Many feel that this is the most significant single step in the past twenty-five years taken cooperatively by the Colleges of Agriculture and of Education to help teachers keep abreast of agricultural technology.

The related problem, that of acquiring the "know how" haunts teachers as they try to up-grade their instruction to develop deeper and broader understandings of the applications of science and technology to farming. These understandings are essential undergirdings of agricultural practices taught. Vocational agriculture must include instruction in greater depth. Teachers in the "golden sixties" will need a higher grade of instruction at the university before entering teaching than their predecessors have had. This will have to continue indefinitely with teachers in service.

A third quality that should be built into programs is application of instruction at the high school level to a wider variety of occupations. Most teachers emphasize in their teaching those managerial abilities and cultural and mechanical skills that have relevance to the operation of farming enterprises, and presumably, for the occupation of farming. But studies such as those by Clark and Kennedy in Michigan, Hoover in Pennsylvania, Thompson in Californis, and others show that there *also* is a wide variety of other occupations represented by employers who would like workers who are proficient in certain farming abilities and agricultural understandings. The implication, then, is that when students are taught farm practices they should be led to discover the application of these practices to a variety of the occupations in which these agricultural understandings and abilities are needed. Examples might include: feeding practices that should be understood by the feed dealer and sales person; fertilizing recommendations and practices that a farm supplier should know; and abilities needed by farm credit agents to judge soil and to analyze a farm business.

This brings us to the fourth adjustment for which ways and means should be found. It is the greater utilization of students' farming programs for guidance and instruction. One of the more widely accepted principles in the selection and planning of farming programs is that the enterprises and the activities selected should be those found in the type of farming represented on the home farm and/or in the type of farming in which the young man hopes to engage. You and I subscribe to this principle for the young man *who is farming, or who hopes to farm*. But how adequate is this principle for those who start thinking about other agricultural occupations, as many of them might well do?

There has been some pretty loose thinking about these occupations; their designation and their nature, and the relation of vocational agriculture to them. While it is desirable to unfreeze resistance to change and open minds for new ideas, we should be realistic in determining what is a rational position to take. Whether or not you consider the stand I take is sensible, you are entitled to know what it is.

It is now quite clear that in many businesses, professions and industries involving products *from*, and supplies, services and education *for* farmers, it is either desirable or essential that the worker be experienced in farming and have an understanding of some of the subject matter of agriculture. *One* of the purposes of vocational agriculture, then, should be to provide those experiences that (1) will aid students to set suitable career and educational goals in agriculture; (2) will give students a background for advanced and/or specialized instruction in agricultural science and technology; and (3) will develop those understandings of agriculture appropriate to be taught in the secondary school, and that are likely to contribute to the subsequent occupational success of the individual. As has always been true, the basis for good vocational agriculture is supervised farming programs. Supervised farming programs, selected and planned in line with the students' past experiences and career goals, should be the core of these experiences. Some examples may help to show how farming programs may be modified or expanded to this end.

Let us suppose that a young man is considering either teaching of agriculture, agricultural extension, or related professions. Experience in a large variety of enterprises is essential for success. If the livestock enterprises on the farm where he is gaining experience include only beef and swine in a state where dairying is important on most farms, and sheep and poultry on some farms, somehow he must gain some operational experience in these latter enterprises. Teacher educators would agree that they are constantly confronted by the inadequate farming experience of many of the university students enrolled in preparatory programs for teaching. If these young men's interest in an educational career could have been identified while in high school these gaps in their experience could have been filled by more diversified programs on their home farms and/or placement for farm experience on another farm. This would be particularly important for the increasing number of youth whose parents are farming part time, and thus may have only a few home-farm enterprises.

We might find another young man from a small farm who shows aptitude and interest in farm mechanics and who thinks he might consider a cooperative occupational training program to prepare for farm machinery sales and service, probably at the post-high school level. Such a cooperative program cannot provide for experience in the field operation of machinery. But, if such experience is highly desirable, it could be obtained through placement on a larger, highly mechanized farm or on a school land laboratory where a youth could gain this more extensive experience.

A student who lives in a cash crop farming environment, but who is somewhat interested in becoming a farm veterinarian certainly should determine whether he likes to work with livestock, and to gain experience in handling farm animals. Such a student could be encouraged to have as wide a variety of livestock projects -- albeit on a small scale -- as his home farm situation will permit; he could thus meet farmers' livestock problems in their natural setting and learn to solve some of them through instruction in vocational agriculture.

If time permitted, many other examples could be given of different experiences that could be gained in farming programs and that might be related to the students' occupational goals, or at least to their occupational interests. These are sufficient, however, for us to proceed to indicate four criteria for the selection of farming programs that may enlarge and amplify the experiences and understandings that are basic for off-farm occupations having agricultural attributes or connotations.

1. The project or activity provides new or additional experiences that will have exploratory value for the guidance of the student.

2. The activity or project includes those enterprises that involve experiences that are important in the occupation toward which the student is aiming or which he is considering.

3. The project or activity provides practice to develop those abilities that will help a person to succeed in an off-farm occupation of an agricultural nature.

4. The project or activity is related to the course of study being followed by the class.

While it might not be possible to meet all these criteria in every case, one or more should be met, depending on the occupation in view and the farm situation.

Of the many adjustments, then, that are needed for vocational agriculture in the "golden sixties", and for which ways and means of implementation should be devised, I have named four: bring about greater utilization of technological developments; put greater depth into teaching through greater emphasis on the scientific understandings undergirding agricultural practices; apply instruction in agriculture to a broader range of occupational goals; and make greater use of farming programs for guidance and experiential background. If a discussion were to be carried out on these adjustments it could move this thinking forward to reveal many other adjustments, as well as ways and means so that vocational agriculture might become more dynamic, challenging, and personally more significant and exciting to youth in the sixties. I would like now to turn to several problem areas that must be attacked with vigor by leaders in agricultural education.

Problem Areas For Consideration

The first of these problem areas I shall call the correction of the incomplete or distorted image of agriculture in the minds of school counselors, other educators, many parents and the general public. The colleges of agriculture are greatly concerned about this because of the widening gap caused by increasing agricultural career placement opportunities in contrast to decreasing enrollments of students majoring in agriculture. All of us are aware of school administrators who have been misled on the importance of vocational agriculture through misinterpretation of statistical data on trends and the error of thinking of farming and agriculture as synonymous. Many examples could be cited at this point if time permitted.

It is interesting to note, in passing, that the U. S. Bureau of the Census considers farming and agriculture as more or less synonymous. On the other hand, the Bureau of Labor Statistics, which annually publishes the Occupational Outlook Handbook used 14 pages in its 1959 edition to list and describe the agricultural occupations other than farming, all under the chapter title of "Agricultural Occupations".

Much needs to be done by many different agencies and institutions to create a truer image of agriculture, and in many states there is much progress. In Michigan we have made a start, but much remains to be done. We have given wide distribution to several documents. One of these is "Four Fallacies About Agriculture" by Dr. C. P. Wilson, Director of the School of Agriculture, Kansas State University. Another is a brochure, "A Look at Agriculture in Michigan" prepared under the auspices of the State Curriculum Committee on Agricultural Education, which is a state advisory committee. This committee also prepared and gave wide distribution to a pamphlet to aid school counselors to work with teachers in vocational guidance in regard to agriculture.

There is also a need to present a truer image of vocational agriculture. The most significant thing we have done in Michigan in the past two years is the publishing and dissemination of a statement of beliefs. This is in the form of a pamphlet setting forth the philosophy and objectives of vocational agriculture as developed cooperatively by the state consultant staff and the teacher education staff and useful in helping create a truer image of vocational agriculture. The state consultant staff has worked with many school administrators in state and regional conferences using this statement.

We have accepted opportunities to speak to teachers in university-based guidance institutes preparing to become school counselors. We have endeavored to give a true picture to graduate students majoring in administration and in guidance. We have conducted and reported research to discover much-needed information on agricultural businesses, industries, services, and professions. Teachers of agriculture have been encouraged to pitch their instruction to a broader occupational base and to teach occupational information about agriculture. But with all this activity the true image of agriculture and of vocational agriculture has not yet been seen by the great majority of the people.

If this association is looking for a worthwhile project to launch I can think of no better one at the moment than that of re-creating a truer image of agriculture and of vocational agriculture in the minds of educators and the general public.

The second problem area to which I would call your attention is that of devising new types of instructional programs, of trying them out, and of installing them in schools and community colleges, including those that have never offered vocational agriculture.

Agricultural educators have sometimes been inclined to rationalize the failure of local boards of education to maintain or install vocational agriculture by implying that administrators are obtuse or lack vision, that college admission requirements are too academic, that many schools are too small, that much of the land is of marginal character, that urbanization has taken place, or that other factors are the cause. But if we approach this with imagination, it would seem that more experimental programs could be devised and tried out. We need not wait for word from Washington. Actually, experimental programs have been encouraged by the Federal office for sometime.

The midwest Airborne Television project financed by a $7 million foundation grant will get under way experimentally next month. By September it will be providing instruction to an estimated half-million school pupils in parts of six states. There is no instruction provided in agriculture. Should there be? People in many fields have been experimenting with teaching machines. Is there a place for these in agriculture?

On a recent visit to one state I inquired of a man in a position of leadership what was being done in that state to prepare for the training of technicians in agriculture. His immediate reply, thinking of the N.D.E.A., Title VIII, was "Nothing. The Federal office says, 'There is to be no program because there are no technicians in agriculture'." On the other hand a committee in another state, working with representatives of fruit growers, processors and distributors has been told by these representatives that they do, indeed, employ technicians. Is the best answer to be found through bureaucratic authority or through well designed research on the question? Dr. George Brandon, who has conducted as much research as anyone of whom I am aware on technicians in industry says that on the basis of his studies and what is known about the nature of the work of technicians, there is every reason to believe that there are technicians in agricultural production, business, and industry. Assuming that this be true, what would happen if financial support were to be made available to start programs for training technicians in agriculture? If leaders in industrial education were the only ones who had had experience and had done research in this area, the answer is rather obvious. What should leaders in agricultural education be doing?

Dr. Walter Cocking, retired editor of The School Executive (now Overview) and himself an experienced administrator of schools maintaining programs of vocational agriculture, in a recent talk to a graduate class of the speaker's made this statement: "Vocational agriculture is at the crossroads. Either it will adjust its objectives and programs to the dynamic and rapidly changing occupational complex or it will gradually recede or be crowded out by programs that are so adjusted." The implication that I draw from his statement is that onto the solid, sturdy root stock of vocational agriculture must somehow be grafted the vigorous branches that will reflect the new values, understandings and skills demanded in the agricultural segment of our dynamic economy, and that will promote renewed growth and productiveness.

The third major problem area to which I would call attention is the vocational guidance of the more able and talented youth in our rural areas. Of course, all of these who are interested in farming and for whom there can be found opportunities should be guided to make a beginning and advance in farming. But this will not take all of the talented. Many more farm youth of high potential are needed in colleges of agriculture to prepare for careers in agricultural technology, agricultural engineering, agricultural businesses and professional services. Teachers of agriculture today need to be much better students than those of a generation ago. The quality, the impact of programs of vocational agriculture on the rural economy and social life, yes even the continued existence of these programs will depend on the success of our profession in attracting to it the best minds and personalities from among colleges of agriculture.

Who Should Blue-Print The Future of Vocational Agriculture?

A bit of reflection on the adjustments needed in vocational agriculture and the three problem areas briefly outlined leads to the third major question to be raised in this paper: Who is blue-printing the future of vocational agriculture? As diligent and devoted teacher educators, we have been trying to do better our assigned task of preparing, and professionally educating, in-service the teachers of vocational agriculture for whom we are inescapably responsible. We have done this by passing on the heritage of over 50 years of development of know-how possessed and exemplified by the more successful practitioners. But successful operation according to formula sometimes has taken precedence over creative planning and teaching. State consultants have tended, too, to be pre-occupied with operations. They, and we as teacher-educators, often have been the ones to whom teachers have turned for mapping of programs and prescription of practices in teaching vocational agriculture. If teachers have failed to exhibit creativeness, ingenuity, and the experimental approach to development of new and promising departures what is the reason? Is it because few among us have opened their minds for new ideas? Have we really encouraged them to be daring, or have we urged them only to stick to the tried and tested procedures?

Man in his life passes through five stages, of which I will comment on three. During youth he flexes his muscles. He is daring and willing to try his hand at a variety of activities. He is vigorous and ambitious. Youth is a time when new ideas are embraced and experimented with. As man reaches maturity he grows in self confidence and in a feeling of self assurance and accomplishment that follows realization that the courses of action selected were good. His morale is high, and there is concentration on the carrying out of ideas of suitable ways and means to attain commonly accepted goals. Middle age, however, is a period when habits tend to become fixed, and one becomes stubborn in his resistance to change.

If we can liken vocational agriculture to man, in which stage is it today? Does vocational agriculture still have youth, vigor, and daring? Is it characterized by emphasis on operation of the safe and sane? Is it already showing signs of aging that inevitably might lead to senility and retirement? To what extent are the characteristics of vocational agriculture in the sixties a reflection of what the leadership in the profession does? Let us face these questions with perception and candor. Have we adequately described the role of vocational agriculture in the sixties and are we fully aware of how vastly different this is or should be from the role of vocational agriculture of the twenties?

Another characteristic of middle age or old age is the tendency to resist attacks, to hold on to possessions, and to become stubborn in resistance to change. A youth is not so concerned if he is deprived of some possession or privilege. He takes on something else. So, I ask, have the leaders in vocational agriculture after forty-five years now become overly "protective"? Programs, policies, and principles have recently come under scrutiny, and sometimes justifiably so. Have leaders, then, tended to bolster threatened positions and go on the defensive when they should come to grips with criticsms in a re-examination of what they are doing, taking a fresh look at new needs and new demands in order to chart better programs?

Who is blue-printing the future of vocational agriculture? I am challenging the young men of this profession and the "middle-aged men" who are young in mind and spirit because I believe they are the ones to do it.

Responsibilities in Education of Future Leaders

If the questions just raised were fully explored one would soon be aware that somewhere there is a responsibility for selecting and educating the future leadership in agricultural education. And, of course, the members of the American Association of Teacher Educators in Agriculture must accept a major share of this responsibility. If this is so, let us start by considering, in addition to the attitudes I have mentioned, some of the attributes that might be envisioned in future leaders in the field of agricultural education. I will mention four.

First, these leaders will need a broader understanding of the principles, programs, and program planning procedures in all of vocational education and the practical arts than leaders of the past. The methods of financing or reimbursing programs have created rather artificial barriers - sometimes even called high fences - around what we think of as the fields of vocational education. But a possessive attitude - "this is vocational agriculture, this is distributive education" - will only be a handicap. For example: rural development -- or resource development if you will -- for people in economically depressed and sparsely settled areas of our country calls for leaders who know how to work with a variety of agencies, institutions and citizen groups to develop a variety of programs to aid them to make a better living. The programs cut across several of what have become traditional fields. The people whom they are designed to help, however, care little what labels are put on these programs. This has been impressed especially on those who have worked in other countries as consultants on vocational education.

The preparation of rural youth of this country for entry and advancement in off-farm occupations having agricultural attributes necessitates the cooperative work of agricultural educators and business and industrial educators. They will need to speak a common language and be able to cooperate in research studies and in outlining the substantive elements of training programs.

I submit that leaders in the several fields of vocational education have not always been able to speak a common language. This has been impressed upon me rather dramatically as a result of an experience during the past year. About eighteen months ago the Michigan State Board of Control for Vocational Education made a grant of $75,000 for a three-year study to evaluate vocational education in the state. The study was launched with the naming of four task forces. I found myself as chairman of the one on philosophy and objectives of vocational education. We have members from the teacher education and consultant staffs from the four fields, as well as administrators and other general professional educators. Eight all-day meetings have been held to-date, in addition to many meetings by committees organized by members of the task force. We have a statement of objectives of (total) education, but are still trying to come to agreement on the meaning, nature, purposes, process, and expected outcomes of vocational education.

This experience of trying to get a group of people like this to come to grips with objectives and processes that are common to several fields of vocational education has been a revelation to me. People in business education almost never have spoken of "vocational" education, even though they are engaged in it. The home economics education people use the term largely to connote a reimbursable program, yet differences in outcomes of these programs compared to non-reimbursed programs are difficult to find. People in trade and industrial education often tend to use the term synonymously with vocational education. Administrators maintain that all school subjects contribute to occupational competency, so they want to know what is vocational education.

It has become increasingly clear that the leaders in the several fields of vocational education just have not known as well as they should how to talk to one another and to other educators about vocational education as a totality. They need to become better able to work with other educators to improve the entire program of education at all levels, and including vocational education.

The discussions which our task force has held are remarkable not so much because of documents produced as for growth of the members in the development of a philosophy. I would wholeheartedly recommend this adventure in hard thinking to other states. It might not be a bad thing on a regional or national scale.

Turning to the second attribute of leaders of the future, let us say that competency is needed in the interpretation of social, economic, and educational trends, and in the determination of the implications of these trends for vocational education. If we agree that one learns what he practices, let us be quite specific here and suggest that the future leader should have practice in the identification of trends from data, and in finding data to substantiate or refute alleged trends. He should then practice the drawing of implications for vocational education from them. He could well start with the 55 trends so well substantiated at Purdue by Professors Woerdehoff, Nelson and Coster. These trends were ranked by vocational educators in all fields; by economists, sociologists, and educational philosophers; and by representatives of management and labor. Students in one of my graduate courses have done this, and they say this is the most revealing and rewarding activity of the course. This is one way in which we "stretch" potential leaders and help them to gain educational stature and vision.

The third attribute follows from what I have just been saying. The future leaders in agricultural education will need a broad preparation base, with advanced study in sociology, economics, psychology and communication arts. Sociologists have made many important contributions, including the identification of types of farmers according to their adoption of approved farming practices; analysis of occupational aspirations and expectations of youth with related factors leading to a better understanding of vocational development; and, with the assistance of psychologists, the improvement of processes for working with groups and role identification. Many of us have been impressed with what teacher educators at North Carolina State College have done in the application of principles of rural sociology to community study in the undergraduate training program of teachers of agriculture. Their success in this is an outstanding example of a cooperative project between education and a related discipline. We need more of this.

The last attribute to be mentioned is the possession of understandings and competency in international education. I do not need to remind you that the future freedom and prosperity of this country is intimately tied to that of the rest of the free world, and that the responsibilities in vocational education in underdeveloped countries are very great. You and I are committed to the belief that education is the most effective means of helping people to help themselves. Teaching people how to teach others the vocation of farming so as to improve their living ranks high as a needed activity. Some of us have had opportunities to work with educators in other countries. These opportunities will increase. For example, our own institution now has university contracts with I.C.A. or with private foundations in seven different countries in Asia, Africa, and South America, and has over fifty faculty members at work in these countries. Many of the teachers in our states are now or will be working in technical assistance programs. All of us have been involved in working with educators from other countries who are flocking to our universities and public schools in increasing numbers. How well prepared are we to understand these people and the cultures from which they come? Have we been successful in sensing their needs and in helping them to meet these needs? Do we know how to demonstrate that learning is for doing and not for cold storage? Have we the ability to communicate to them the philosophies of education in this country, and the ways in which educational programs are affected by these philosophies and our own culture?

If we are to make significant progress in answering these questions perhaps one of the real needs may be for a national center to prepare leaders in agricultural education for their role in international education. I am not aware that any university is now doing this on a broad scale although some are working at it. Some means should be found for up-grading all of us in this respect.

These, then, are some of the attributes that should be possessed by leaders in the golden sixties. It should be a challenge to the membership of this organization to assist those who have leadership potential to develop these qualities.

In the more than three and a half decades during which I have been privileged to be associated with this profession, many problems and difficulties have been experienced. None have been more perplexing and challenging than those that lie ahead in this decade. But the strength, the spirit of service, and the devotion to ideals made manifest by the members of this profession have not been surpassed by any comparable group. As I look down the road ahead I have an unshaken faith that the leaders of the future will, through their vision, zeal, and concern for human betterment, lead us to greater heights of professional cooperation and usefulness.

RETROSPECT AND PROSPECT

H. M. Hamlin
Chairman of Agricultural Education
University of Illinois
1959

This is a good time to look backward and forward.

We misjudge the present and the prospects for the future if we do not know how the present came to be.

Many of the younger generation believe a mythology about public school education in agriculture. They seem to believe that:

1. Public school education in agriculture began with the Smith-Hughes Act and would end if national aid were discontinued.

2. Vocational agriculture is the only form of public school education in agriculture or at least the only form worthy of consideration.

3. The future of vocational agriculture is the future of the high school program in vocational agriculture.

My good friend, Gordon Berg, has his special brand of mytholody. He thinks that the future of public school education in agriculture depends upon decisions by Dr. Spanton.

How Did We Get This Way?

Actually, agriculture was first taught in an American school in 1734, in an American high school in 1821, in a public elementary school in 1858, and in a public high school in 1902. Before the Smith-Hughes Act was passed in 1917:

8 states had set up non-collegiate state schools of agriculture.
3 states had created congressional district schools of agriculture.
5 states had established county agricultural schools.
5 states required agriculture to be taught in all rural schools.
7 states required the teaching of agriculture in all elementary schools.
2 states had provided agricultural high schools.
9 states gave financial aid for the teaching of agriculture.

In 1916, 3181 high schools were teaching agriculture, about a third of the number now teaching it.

The development of public school education in agriculture was a grass-roots movement that grew for decades before the Smith-Hughes Act was passed. The Act reflected a desire to encourage and extend what was already going on in some schools.

Education for useful work is rooted deeply in our culture. We have expected our people to work from the days when John Smith provided the Virginia colonists with a choice to work or to starve. The Puritans frowned upon all forms of recreation. Our religious tradition called for work; "Work for the Night is Coming" was long one of our most sung hymns. We have sometimes made a fetish of work. Dr. Robert J. Havighurst of the University of Chicago said a few years ago that "In American society, life-work is the most important single thing about a man. He has been taught to evaluate his worth to society, and sometimes his worth in the sight of God, by the level of his occupation and the quality of his performance in it."

Every American colony had its compulsory apprenticeship laws. Vocational education was the first compulsory education we had in this country. We have had a long-standing fear, especially in the rural areas, that the schools will educate away from work, rather than prepare for useful work.

It was out of this tradition that agricultural education emerged. It was well under way in the schools when the Smith-Hughes Act was passed and it would have continued to develop if the Act had never been passed.

The Smith-Hughes Act embodied a great idea. We ought to try it with all its implications sometime. The big idea has been whittled down to the size of the men who have interpreted and administered it.

The Act was based upon conceptions that:

1. Education should be provided for workers in all occupations requiring special knowledge and skill, not merely for workers in the professions.

2. Vocational education should be available for all who are 14 years of age or over, not merely for those 14 to 17 years of age.

3. Vocational education should be conducted as an integral part of the public school system, not in separate schools, and not as a fringe activity of the public schools. Proponents of the Act argued that the provision of vocational education in the public schools would improve the schools as a whole, make them more attractive, increase their holding power, make them more realistic and practical, and motivate learning of many types

by relating it to the students' vocational objectives.

4. Public education is a cooperative enterprise involving the school districts, the states, and the nation.

The Smith-Hughes Act was intended to encourage vocational education in farming, not to kill off all other forms of agricultural education in the public schools. There are four other forms.

1. Agricultural education provided through the non-agricultural subjects in the elementary schools, high schools, community colleges, and adult divisions of school systems.

2. Courses in general agriculture for those who have not made occupational choices.

3. Courses in non-vocational agriculture for those who are engaged in or who expect to engage in occupations other than agriculture as their primary means of earning a living.

4. Agricultural education for workers in agricultural occupations other than farming.

The growth and development of public school education in agriculture has been almost unbelievable to one who has seen most of it occur. My first contacts with it were in 1911 as a student in a class in agriculture in a Minnesota high school, 48 years ago.

What was public school education in agriculture like in 1911? There were no specially prepared teachers of agriculture. The first departments of agricultural education in the colleges were established at about this time. There was no special state supervision of agricultural education. There were no organizations of professional workers in the field. No national funds were available and only a few states provided state funds. There was no literature of agricultural education, no research on which to draw in developing the program. The farmers for whom the program was intended were commonly indifferent or antagonistic. The subject matter to be taught was unreliable.

There have been tremendous accomplishments in the last 48 years:

400,000 are now enrolled in high school vocational agriculture.
300,000 are now enrolled annually in classes for young and adult farmers.
$60 million is spent annually for vocational education in agriculture.
The states and the school districts now contribute three out of each four dollars spent for salaries and travel. When expenditures for buildings, equipment, and supplies are included, the state and school districts of Illinois contribute seven of each eight dollars.

Enormous numbers were enrolled in war-training and veterans programs during and following World War II.
The national organization of teachers of vocational agriculture has 9,000 members.
There is a strong national organization, the American Vocational Association.
The latest report of the Office of Education indicates that 2,630 studies in agricultural education have been completed.
State supervision, superior to that in most subject-matter fields, has been provided.
Departments of agricultural education in the colleges have achieved status among the departments of their colleges and universities.
The budget for teacher education in agriculture at the University of Illinois, below $10,000 in 1938, is now in excess of $125,000.

Can greater development since 1911 be cited in other fields?

Where Are We Now?

We have been going through a pioneering stage in public school education in agriculture, paralleling the period when Americans lived in log cabins and sod huts. To consider this period to be one in which agricultural education rose to its ultimate peak and then began to decline is to misread history as badly as it can be misread.

We have come into an era when we are examining what we have and what we are doing. This is a sign of health and harbinger of future growth and development.

We should not be discouraged because we are not further along in developing the public school education in agriculture that is needed. It takes a long time to build a national program of public education in any area.

Building upon the foundation we have, we should make more progress in the next 48 years than we have made in the last 48 years. To be sure, some of the foundation is not sound, and will have to be cleared away, but there is much in our tradition that will be very helpful.

There is not time to recount all of the problems we now face, but I can comment upon a few of them.

We are well aware of the decline of the percentage of farmers in the population. This means principally that, with a rapidly increasing total population, there were never so many dependent upon so few for the necessities of life, and that far more thorough education, continued throughout their active careers, is required for those who remain in farming. We have not come close to providing the education farmers really need. Why do we think that we are running out of work?

We have contributed to a situation in which we worry about surpluses of food, rather than about shortages as we did prior to the passage of the Smith-Hughes Act. May our worries always be about surpluses, rather than shortages! If we allow agricultural education to slip, our situation could be quickly reversed.

Agriculture is still a tremendous industry involving 40 percent of the labor force of the United States. Our vision should encompass agriculture, not merely farming. We do not yet know what our contribution to education for agricultural occupations other than farming is to be, or how to make it, but it could conceivably be a very great one.

A modern general education would acquaint students with all of the important parts of their environment. Agriculture is vital to the very existence of everyone and would not be overlooked.

Governmental policy for agriculture, made by a people primarily urban, has become critically important. We neglect the agricultural education of non-farmers at our peril.

Thirty thousand occupations compete with farming for our talented farm youth. A complicated high school curriculum provides many subjects which compete with agriculture.

Specialized counselors are having a larger part in determing the courses students take. We must work with them to make sure that opportunities in agriculture receive adequate consideration.

We have just passed the lowest point in the cycle of interest in vocational education. High interest in it developed before and immediately after the passage of the Smith-Hughes Act. The recent interest in shoring up science, mathematics, English, and the 3 R's, which needed to be shored up, may soon be displaced by a new interest in vocational education.

"Technical education" is already popular in many quarters. By the most commonly accepted definition it is education for occupations requiring more than high school education and less than four years of college. This embraces most education beyond the high school for farmers and for workers in many other agricultural occupations. We should not be misled by the narrow definition of "Technical Education" in the Defense Education Act of 1958; this will have to be revised.

Where Should We Go?

The general direction in which we should move in the next 48 years is apparent. A tremendous amount of work is required in hewing out the specific programs of agricultural education that will be needed.

We can base our planning for the future upon a few general principles:

1. Appropriate agricultural education should be provided for all Americans, not merely for farmers or workers in agricultural occupations.

2. Agricultural education should be provided in every unit of the public school system: elementary school, junior high school, senior high school, community college, technical institute, adult division.

3. Agricultural education must find its place in a new comprehensive institution designed to provide education beyond the high school for those who do not belong in the four-year colleges and universities.

4. Long-term public policy for the development of public school education in agriculture must be evolved in the school districts, the states, and the nation.

To implement these principles, we must:
- Continue the development of vocational education in agriculture as it was contemplated under the Smith-Hughes Act.
- Provide the four other types of agricultural education I have mentioned.
- Develop appropriate programs of agricultural education in each unit of the public school system.
- Work closely with our professional associates in all fields of education.
- Establish adequate machinery for developing policy for public school education in agriculture.

The first and most important step is to revise our machinery for policy making. We have often failed to recognize that in this country citizens have the final responsibility for public policy including policy for public school education in agriculture. We in the profession have often failed to encourage the local, state, and national policy making bodies to develop and enact adequate policy and to give them the information and the help they need in providing it.

The most important policy making group is the local board of education. We have commonly ignored the local boards, working instead with teachers and administrators, although these boards can make or break public school education in agriculture.

In Illinois, and probably in many other state, state policy for public school education in agriculture has been intrusted to a poorly constituted state board of vocational education, which is concerned only with one of the five forms of agricultural education. In Illinois, the legislature has dealt with public school education in agriculture only in two ways: in 1918 it accepted the provisions of the Smith-Hughes Act; each biennium since it has appropriated rather generously for the program in vocational education in agriculture. We in agricultural education have had no part in the development of state policy for the public schools as a whole, although agricultural education in the schools is increasingly affected by it. We become aroused about state policy only when our special funds are threatened. Then we organize pressures to keep them.

National policy making for agricultural education and all other forms of public education is even more haphazard. We rely upon Congress as our policy making body, but Congress has too many other interests to give adequate attention to education. After 170 years it has produced no national policy toward education. Instead it has created some 300 national programs in the field of education, administered by about 200 agencies of government, each operating under a separate set of policies. Our legislations for vocational education is artifically separated from legislation for other forms of public education. Two nationally aided programs of agricultural education, vocational agriculture and agricultural extension, are treated by Congress as though they had no relation to each other.

We in agricultural education pioneered in the development of advisory committees composed of lay citizens, but we have never seen very clearly their relationship to the development of public policy for agricultural education. In my opinion, the principal function of these committees is to aid local, state, and national policy making bodies in the development of policy. There are three reasons why they are needed in policy development. Our policy making bodies are not adequately representative of the public. They have not by themselves been able over the decades and centuries to evolve adequate policies for public education; they need help from their fellow citizens. If they do not do what needs to be done on behalf of the public, policy decisions are made by professional educators who have no right to make them. Policy making bodies need both lay and professional help.

There are certain basic policy questions which only the citizenry or its adequate representatives can answer:

1. How is policy to be developed, interpreted, executed, and publicized?
2. Who are to be served by the public schools? How? How much? When? Where?
3. What public purposes are the schools to serve?
4. How is the public to decide whether the schools are accomplishing its purposes?

5. How are the schools to be organized and administered?
6. How are adequate professional and non-professional staffs to be secured and held?
7. How is the school's program to be planned?
8. How are adequate funds and facilities to be provided?

There is probably not a situation in the United States, local, state or national, where these questions have been answered adequately for agricultural education. Most of the schools in which agriculture is taught have no organized written policies. Many of the "policies" which have been developed would not bear close scrutiny. Many alleged policy statements are statements of rules and regulations and do not answer the basic policy questions. In many cases policy has been developed by a few people and is unknown to the school staffs or the constituencies of the schools.

It is time that we in agricultural education face the first "fact of life" in our field: that control is vested with the voters and that, if we are to have sound policy for public school education in agriculture, it will be authorized by citizens. I nominate as the silliest statement of the year the one made at the National Conference on Agricultural Education in March, 1959, to the effect that "We who are in this room (head state supervisors and teacher trainers) will determine the future of agricultural education in this country."

The Role of Agricultural Teacher Educators in Bringing About Needed Changes

We in teacher education will, of course, bear a heavy responsibility for what is to happen in public school education in agriculture.

No group is as much responsible as teacher educators for the mythology about agricultural education to which I referred at the beginning of my talk. We must have an accurate version of history and an adequate knowledge of the present situation to decide what to do in the future.

I have the following specific suggestions regarding the role of teacher educators in this transitional period.

We must do what we can through preservice and inservice programs to prepare teachers for change, to encourage thought about the nature of change, and to stimulate creativity.

We must serve, far more than we have, as consultants to policy making groups, citizens committees, and school administrators.

We must devote far more time than we have to the research and planning required in shaping a new program. We should be working actively in pilot centers of many types where the most promising ideas are tried out.

We must assume our unique responsibility in the planning of courses in agriculture for the schools. What is being done by university personnel in redesigning secondary school science and mathematics offers suggestions for our procedures. We shall lag far behind other fields if we expect local teachers of agriculture to do all of the course planning that is done.

In most states, we shall have to build from the ground-up programs in four of the five recognized fields of agricultural education: agricultural education provided by teachers other than teachers of agriculture, general agriculture, non-vocational agriculture, and agricultural education for non-farming occupations.

We shall need comprehensive and balanced departments of agricultural education in our colleges and universities, which provide preservice education, inservice education, graduate work, research, and the preparation of publications (professional and subject-matter) for use in the field. Departments of this kind will require more staff and more funds than we have. Some states cannot provide them, but should join other states to make them possible.

Most of all we in teacher education need a broad vision of the possibilities of agricultural education. Our present problem in agricultural education is not going to be solved by adopting some panacea, such as training for related occupations in the high school. We must do more than tinker with the details of our present program. What we must do will require a long time, but we can keep the public happy as long as we are moving, as rapidly as possible, in the right direction. Defensiveness in adherence to the status quo will not pay off.

Those most capable of leading in the reconstruction of public school education in agriculture are usually to be found in teacher education. If we in teacher education work wisely and tactfully with teachers, supervisors and policy making groups, we can have a tremendous impact.

There is great need in our field for able young men with bold new ideas. And for older men who have them, for that matter.

Conclusion

We are in the third stage of the evolution of public school education in agriculture.

In the first stage, the communities and states began the teaching of agriculture. In the second stage, there was extensive development under the Smith-Hughes and related acts. We are now in the process of developing a modernized, comprehensive program of public school education in agriculture which continues and improves what we have begun in vocational education in agriculture but which recognizes that all are in need of appropriate education in agriculture.

We shall be pretty stupid if we let the program in public school education in agriculture go down the drain just at the time when it could have its greatest development. I don't think we're stupid. We in agricultural education can rise to the occasion with which we are confronted. We have many people of high ability in our field, who command the confidence of those who know them. And teacher educators will be in the vanguard of the reconstruction movement.

The program of public school education in agriculture to be developed must be a program in the public interest, not one developed to serve us, and it must be planned by adequate representatives of the public with our help. It must be clearly related to basic American traditions and ideals and, if it is, the American people will give us ever-increasing support.

VOCATIONAL AGRICULTURE AND EDUCATION AS A WHOLE

Henry S. Brunner
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1958

It is to be hoped, and we must be assured, that you understood the aspiration, the "W", in the last word of the announced subject to which I am addressing myself. The word is W-H-O-L-E; not without the "W". An article published during the last year opened with the statement, "Vocational Agriculture has reached the bemused age of 40." My own reaction, clothed in memories of David Grayson's "Adventures in Contentment", was a comfortable and favorable one. But looking the word "bemused" up in the dictionary we find it really means "dazed, muddled, stupefied." I wonder if we are ready to agree that Vocational Agriculture is dazed, muddled and/or stupefied. Much rather I would like to have agreement here this morning that we may have confidence in Vocational Agriculture in our American high schools because we believe that this unique instrument of democratic education has served our Nation well. Certainly the program is not perfect. This is the beauty of democracy that there are always higher goals, and that the need to improve our ways of doing things is always urgent. Can we agree also that the way of progress lies in doing more of the good things already under way, in refining procedures now in the pioneering stage, in making available to more students the advantages currently enjoyed by those enrolled in the best of our schools?

When the wandering scholars of the Middle Ages gathered about them the students who came to listen, question, and discuss, history saw the beginning of the modern school. In the experience of a common search for understanding there was unity, wholeness. For a long while American education has contented itself with the Mark Hopkins' symbol of the student and teacher, poised on the log of learning. Our concept of education as a whole calls for a new symbol to enlarge Mr. Hopkins' log. The new educational symbol must carry the fact of joint enterprise, the common concerns from many directions for the many aspects of a total human personality and his place in the society.

We submit, therefore, that the fundamental intellectual basis upon which a teacher must operate and develop his philosophy is:

A CONCEPT OF SOCIETY

Democracy

1. Regard for the individual
2. Sharing and participation in the direction of society.

3. Faith in intelligent thinking.

In a democracy we believe in the individual, and the right for individual recognition and reward. We must have faith and confidence that a man has within himself the capacity to build for himself and to participate in building for his neighbor across the street and across the sea, a better world.

Since the unit of consideration is the individual, the teacher will, of necessity, need to formulate:

A CONCEPT OF INDIVIDUALITY
No matter what the Society
The Individual has needs--

Food
Clothing
Shelter
Social Adjustment
Emotional Security

This brings us to consideration of the teacher's role. He is the representative of the school, the educational system, and it is his responsibility to carry out:

THE FUNCTION OF THE SCHOOL

Not only to meet the needs of individuals, but also to preserve the Society	Not by meeting needs directly but by making individuals better able to solve their own problems.

When this dual function of education is realized, we automatically project the assumption that it is in the kind of a society for which we have set ourselves to work, that these needs can best be met.

The school as a whole carries out its function through:

THE CURRICULUM
Based on:

Skills
Knowledges
Attitudes
Judgments
Traits
Interests
Aptitudes

And, in one way or another, whether it be systematically organized, or simply a matter of community reaction this school program and the outcomes of education everywhere will be subject to:

EVALUATION

- must and progressively will have to do with standards of living.
- must show a relationship to the Concept of Society originally set as the goal.

With this as guiding philosophy then, there has been prepared, under the slogan title of "THIS WE BELIEVE", an organization of ideas which may be presented as a rationale for a program of preparation for teachers of vocational agriculture.

THIS WE BELIEVE...

"THE TEACHER" MUST HAVE--

A desire to teach
A willingness to work
An appreciation of scholarship
A concept of "the individual"
A sympathetic personality
A love of rural life
A sense of moral responsibility
A commitment to the ideals of freedom

"THE TEACHER" MUST KNOW--

Soils and fertility
Feeds and feeding
Culture of crops
Livestock Diseases - prevention and treatment
Market demands - quality products
Management practices
Conservation procedures
Machinery selection and maintenance
Farm structures' needs
Leadership and citizenship qualities

"THE TEACHER" MUST UNDERSTAND--

How pupils learn
The techniques that facilitate learning
The worth of the individual
The family as a unit
The importance of encouragement

The influence of enthusiasm
Youth's need for love
The power of the spirit

Quoting from the 36th Yearbook of the American Association of School Administrators:

> "We reaffirm the belief that our schools must be dedicated to the sound education of every youth, whatever his talents or his handicaps. We must be concerned with the development of every student's full intellectual capacity, but we must pay adequate attention also to the other aspects of his growth. Our high schools are precious to us as symbols of democracy, but their chief value lies in their power as instruments for strengthening our people one by one and so carrying forward for another generation the endless struggle to liberate and dignify the human spirit."

And borrowing from the poets:

"Know this that every soul is free
To choose his life and what he'll be,
For this eternal truth is given,
That God will force no man to heaven.

"He'll call, persuade, direct aright--
Bless with wisdom, love, and light--
In nameless ways be good and kind,
But never force the human mind.

"Freedom and reason make us men;
Take these away, what are we then?"

We submit, then, that it is the business of Vocational Agriculture and Education as a whole to engage in a titanic effort to weld diverse forces divided by economic rivalry, idealogical discord, and conflicting national interests into an effective instrument of brotherhood for understanding and peace. This we can do in our own field through the teachers we prepare if we broaden their horizons, stimulate their imaginations, and lift their ambitions to new heights -- to develop them into men who can think clearly and make moral judgments; men who will be vocal for truth.

They, in turn, will carry the banners and do these things for their own students, not in addition to preparing them for useful occupations, but as a part of that preparation, as a part of Vocational Agriculture.

PENNSYLVANIA AGRICULTURE

Food Alone

Food Manufacturing	Food Wholesalers	Food Retailers	Total Pa.-Farm and Food
2,945 plants	2,933 establishments	54,000 establishments	184,000 farms and establishments
115,000 workers	33,000 workers	166,000 workers	½ million farmers and employees
$424,000,000. wages	$126,000,000. wages	$316,000,000. wages	$ 1-1/10 billion wages
$ 2½ billion production	$ 3¼ billion sales	$ 3-3/4 billion sales	$ 3-3/4 billion sales
$ 1-1/5 billion investment	$330,000,000. investment	$ 1-3/4 billion investment	$ 6-3/4 billion investment

Farms
124,000 farm business
220,000 workers
$237,000,000. net income
$797,000,000. production
$3-1/3 billion investment

Agri-Business (Food, Fiber, and Related Occupations)

Manufacturers	Wholesalers	Retailers	Total Pa. Agri.-Business
5,329 plants	5,586 establishments	68,000 establishments	206,000 establishments
238,000 workers	54,000 workers	237,000 workers	750,000 workers (1/6 of total)
$854,000,000. wages	$213,000,000. wages	$585,000,000. wages	$2 billion wages
$4¼ billion production	$4¼ billion sales	$5½ billion sales	$5½ billion sales (industry-25)
$2-1/5 billion investment	$541,000,000. investment	$2 billion investment	$8 billion investment

Data from: Pennsylvania Agricultural Extension Service. Presented by Director H. R. Albrecht to Summer Session Class in Agricultural Education, July 1958.

THE IMPORTANCE OF MONEY MANAGEMENT IN FARMING - SOME IMPLICATIONS FOR VOCATIONAL AGRICULTURE

George P. Deyoe
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1957

Much is being written and spoken about the technological revolution in farming. In fact, changes are taking place so rapidly that some people use the term "scientific explosion" to describe what is happening. A few facts and figures will serve to give some highlights of these changes from 1940 to the present.

Today, each farm worker produces enough food and fiber for 20 persons, compared to 10.5 persons in 1940. This increase in productivity per farm worker in these 16 years is approximately the same as the total increase for the period of 120 years from 1820 to 1940. The output per man hour of farm labor practically doubled from 1940 to 1956. The number of farm workers decreased from about 11 million to 8 million. Production increased about 20 percent per acre in cropland and 27 percent per animal. Total production of food and fiber has continued to outstrip the needs of a rapidly increasing population, even though the total acreage of cropland has decreased slightly in recent years.

Some of the most significant technological changes in farming which contributed to increased production per farm worker are the addition of labor-saving machinery and equipment and the adoption of methods which increase production per acre and per animal. In addition, some operations in producing crops and livestock have been eliminated and nonfarm workers are making increased contributions of goods and services to farming.

Farms decreased in number from 6 million in 1940 to 4.8 million in 1954, a decrease of about one-fifth. In some areas, the shrinkage in number of farms has been spectacular. For example, from 1950 to 1954, the number of farms in one county in Illinois decreased nearly 37 percent. From 1940 to 1954, the average farm in the United States increased in size from 174 acres to 242 acres, an increase of nearly 40 percent. Farms in the upper size groups are increasing in number and percentage and decreasing in most of the other groups.

Increases in Capital Requirements

The physical changes in farming are certainly spectacular, and we can understand why the scientific and mechanical revolution in farming has been given wide publicity. Much less attention is given to the fact that capital requirements for farming have increased phenomenally per farm and per man. Many technological changes in farming have been made possible by a substitution of capital for labor. The costs of land and expenditures for various goods and services used in farm production have increased tremendously in recent years.

We may improve our perspective of the present by taking an example from the financing of a farm nearly 100 years ago. Eugene Davenport, former Dean of the College of Agriculture, University of Illinois, wrote a delightful book called Timberland Times (University of Illinois Press, 1950). In this book, he described some of the early experiences of his parents and himself in farming in Michigan. About 1860, his father purchased 80 acres of land with improvements for a total of $600, for which he paid $150 down. He planned to produce maple sugar to pay off his debt. He recognized the possibility of increasing his income from this source if he bought another 80 acres nearby, which was well wooded with maple trees and for which a tax title could be secured for $4 per acre. After trying unsuccessfully to interest his two brothers and a neighbor to go into the purchase with him, he took the plunge and thereby increased his indebtedness to about $770, a "financial mountain in those times." As it turned out, the first sugar crop paid for the land with $50 to spare. Incidentally, the cash production expenditures were extremely low. About 1,100 wooden buckets for collecting sap were made by this farmer and represented primarily his own labor.

The total capital invested per farm worker in the United States in 1956 averaged $15,163, which is more than four times the amount in 1940. The average value of machinery per worker was $1,748 in 1956, or 8 times the average in 1940. The average value of real estate per worker in 1956 was $10,793, or more than four times that of 1940. Even if we adjust for inflation, the dollar value of assets per farm worker used in production more than doubled since 1940. These assets vary widely by farming areas. For example, in 1956, the average investment per worker on typical family commercial farms in the cash-grain area of the Corn Belt was $59,000, compared to $19,000 in 1940. The changes in investment per farm worker reflect increases in size of farms, reductions in number of farm workers, additions to farm capital resources, and rising prices and land values.

The average value of farm land per acre for the United States has practically tripled since 1940. The average value of land and buildings per farm in the United States was $20,405 in 1954, compared to $5,518 in 1940. For the state of Illinois, the average per farm in 1954 was $40,883, and in one county in the cash-grain area the average was $93,977. The upward climb in these values continues.

Active farmers purchased two-thirds or more of all land sold each year since 1940. About half of this was done to expand existing farms in order to spread the large investments in machinery and the cost of labor over a larger acreage and volume of business. The situation is such that farmers frequently outbid non-farmers who are seeking to purchase land as an investment.

From 1940 to 1956, the total farm debt increased from $9.6 billion to $16.9 billion dollars. Of the total indebtedness, the real estate portion increased from $6.6 billion dollars to $9.0 billion dollars, but the non-real estate debt rose from $3.0 billion to $7.9 billion dollars.

The total farm mortgage debt for the United States increased 62 percent from 1950 to 1956. Farm mortgage debt on farms operated by full owners increased 52 percent from 1950 to 1956 and 96 percent on operator-owned portions of part-owner farms. The proportions of mortgaged farms of full owners and part owners increased from 1950 to 1956. However, the ratio of debt to value of these mortgaged farms in 1956 was about the same as in 1950.

In 1955, the total expenditures for goods and services used in farm production (exclusive of share rent and expenditures of landlords for insurance, taxes, interest, and improvements) averaged $5,093 per farm in the United States. About 70 percent of these expenditures for production purposes consisted of feed ($907), operating costs of vehicles and machinery ($691), purchase of motor vehicles and machinery ($576), purchase of livestock and poultry ($555), cash wages ($548), and fertilizer and lime ($292). In addition, the total family living expenditures of farm-operator families averaged $3,308. Since these are averages, the expenditures were much higher for many farmers. For example, for the top two economic classes of commercial farms, the farm production expenditures averaged $18,248 and the family living expenditures averaged $5,070. The preceding figures and others that might be presented show that farming, as never before, requires large capital investments and large expenditures of money for operation.

On the other side of the ledger is the income farmers receive and thus we are made aware of the teeter-totter relationship between costs of production and prices received for farm products. Because of increased dependence on goods and services which are purchased by farmers, they find it increasingly difficult to reduce expenditures to match decreases in the value of sales of farm products. As a result, in periods of cost-price squeezes, such as we are witnessing today, farmers find themselves in economic difficulty much more quickly than was formerly the case.

In order to stay in business, farmers must continue to make adjustments which require increasing amounts of capital and methods which bring satisfactory returns from the use of capital. Increased size of farms, increased mechanization, and increased production per acre and per animal are being used to lower the costs of production per unit. Vertical diversification, improved quality of products, increased use of cooperatives for marketing and purchasing and for providing special services, increased specialization, vertical integration, and off-farm work are other ways used by farmers to meet problems involved in securing and using capital for farming.

The proportion of employed farm persons working at non-farm jobs increased from 21.4 percent in 1940 to 38.6 percent in 1956. The proportion of farm operators who worked 100 days or more off their farms increased from 15 percent in 1939 to 28 percent in 1954. In 1955, 26 percent of farm wives were in the labor force as compared to 17 percent in 1950. It is significant to note that farm families with employed wives averaged 50 percent more than income from those in which wives were not employed.

Young men who wish to get started in farming are finding it increasingly difficult to secure land and provide the necessary capital. A recent study in Indiana of 182 persons under 39 years of age who had started farming from 1947 to 1953 highlights some of these difficulties.* Land available to beginning farmers was limited to about 1.8 percent of the farms larger than 50 acres in size. Nearly 98 percent of the beginners started as tenants. Nearly three-fourths of the beginning operators received substantial family assistance at the start. These averaged 23.9 years of age when starting, compared to 26.2 years for those starting without substantial family assistance. Eighty percent of the "family group" leased land from close relatives. Most of the "non-family" operators located farms primarily through an acquaintanceship with the owner and had greater difficulty in finding farms.

Non-real estate capital of these young farmers when they started to farm averaged about $8,000 of which 60 percent was owned and 40 percent borrowed. The "family group" borrowed 25 percent of the initial investment as direct or secured loans from close relatives, compared to five percent for the "non-family" operators. Flexibility in repayment of credit was provided largely by loans from close relatives for the family group and farm landlords for the non-family operators.

We can conclude that the financial problems of young farmers are especially acute. We may add that some of the policies of governmental agencies and farm organizations have not been adapted to the conditions which confront this group. Older, established farmers are more likely to be in a position to cope with financial problems and to withstand reverses which arise.

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* Problems of Capital Accumulation in Getting Started in Farming, Station Bul. 638, Purdue University, 1957.

Educational Implications

The use of large amounts of money in modern farming requires that farmers have a high degree of competency in financial planning and money management. Increasingly, farmers are becoming managers of capital and decreasingly managers of labor. This constitutes a tremendous challenge to persons responsible for vocational education in agriculture.

The writer is not attempting to pose as a financial expert, but he is convinced that in vocational education in agriculture we should be doing much more than we are doing to meet the challenges which confront us. For the past two summers, he has served on the staff of a workshop in money management at the University of Illinois, and worked with small numbers of selected teachers of vocational agriculture to explore possibilities and develop instructional materials for improved instruction along these lines. Various experts in economics and related fields have been used as resource persons. Important areas of money management were identified and source units developed. Some of the materials which follow were developed in this workshop:

Some suggested major objectives for instruction in money management for present and prospective farmers are the development of the following abilities:

1. Secure and use money for establishment in farming on progressively higher levels.

2. Manage money in order to attain a satisfactory level of living for a farm family.

3. Manage finances to achieve a reasonable degree of security in farming.

4. Use money for fulfilling financial responsibilities to community and nation.

5. Make intelligent use of financial resources to achieve a full and abundant life in farming.

6. Achieve long-time financial goals through farming.

The specific financial objectives and the resources for achieving them differ widely among farm people. Important factors are the age of the operator, his current level of establishment in farming, and his family responsibilities.

High school students of vocational agriculture are concerned with earning money to purchase various items of personal property, secure further education, make investments in foundation animals and other phases of farming appropriate to the age of the persons involved, and secure further capital to establish themselves in farming at a later age.

Young farmers are concerned with becoming established in farming. This involves acquiring capital and resources and using them for securing a satisfactory income. Debts are acquired in the process of securing credit through various channels. As a family is established, attention is given to providing finances for its current well-being and for its financial security should the head of the family become incapacitated or die.

Farmers near middle age have frequently developed a satisfactory scope of operations, but often they are confronted with increased costs for education of members of the family and for the improvement of family living conditions. Many of these farmers are interested in reducing indebtedness and in looking forward to improved financial security for the family. Some farmers at middle age may expand their farming operations in order to meet changed economic conditions and increased family costs, and to aid sons to become established in farming. This may require additional credit and postponement of debt reduction.

Farmers past middle age are interested in eliminating major debts, improving living conditions, establishing financial reserves, saving for retirement, making investments, and developing plans for passing their farms to the next generation.

Some of the major phases of money management important for present and prospective farmers may be summarized under the following headings or "problem areas":

1. Spending the Farm Family Income--This includes estimating spendable income, budgeting, spending for the family and farm business, buying wisely, and establishing a system of record keeping.

2. Saving and Investing--This includes investing in the farm business, and making savings and investments of various kinds for the economic security of the family and for the retirement years of the parents.

3. Selecting and Using Credit--Included are determining credit needs, establishing a credit rating, and selecting and using credit agencies of various kinds.

4. Selecting and Buying Insurance--Included are determining insurance needs, selecting various kinds of insurance, and planning and replanning insuracne programs.

5. Meeting Tax Obligations--These include income taxes, Social Security, real estate taxes, and personal property taxes.

6. Transferring Property -- Important phases are partnerships, transfer through sale and contracts of various kinds, wills and estates, and inheritance and gifts.

In order to teach these phases effectively, attention must be given to (1) developing specific objectives with the groups taught, (2) identifying problems and concerns of students, (3) providing appropriate experiences, activities, teaching aids, and references, (4) identifying and applying approved practices, and (5) evaluating outcomes.

In closing, it is well to re-emphasize that increased attention in vocational agriculture must be given to money management and related economic problems appropriate to the various age groups for which we are providing or should provide instruction. In many cases, this means broadening the base of instruction so as to develop broad understandings as well as specific solutions to current problems. The same may be said for the technological phases of farming related to production and mechanization. Changes are coming so rapidly that to do otherwise is to provide an education which is already out of date or soon becomes outmoded.

Improved education in money matters is especially needed by young farmers who as a group need to cope with many kinds of problems and responsibilities related to money management.

Attention to money matters must be "built into" farming programs and related group instruction for various groups. We need to provide more and better individual on-farm instruction for persons in all age groups who are enrolled for instruction in vocational agriculture, as many financial problems are highly personal and involve family groups.

One mid-west farm editor recently expressed the opinion that boys in high school who have the necessary aptitudes for college should by-pass the so-called practical courses (including vocational agriculture) and confine their high school education to general and basic education. He believes this sort of education will prepare them best for the rapid changes which are bound to come. Most of us cannot agree that this is a simple matter of "either-or". By a broadened yet functional type of vocational education in agriculture, plus general education in other subjects in keeping with the times, we should be able to provide an education which will lay a suitable foundation for adjusting to rapid changes. Furthermore, organized instruction for out-of-school groups must be developed which will provide education needed to cope with changing conditions in farming and the society in which we live.

Certainly, there is much in the sphere of money management and its relations to improved farming, levels of living, and fulfillment of citizens' responsibilities that calls for both special and general education of the highest types.

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Organization, Production, Costs, and Returns on Commercial Family-Operated, Cash-Grain Farms, Corn Belt

1955 With Comparisons*

Item	Unit	Average 1937-41	Average 1947-49	1955
Land in farm	Acre	209	222	230
Cropland harvested	"	163	186	192
Tractors on farm	Number	.81	1.37	2.00
Total labor used	Hour	3,800	3,460	3,390
Operator and family	"	3,050	2,910	2,920
Hired	"	750	550	470
Total farm capital	Dollar	29,950	63,100	89,300
Land and buildings	"	25,040	48,700	71,070
Machinery and equipment	"	1,860	4,220	7,560
Livestock	"	930	2,780	2,190
Crops for sale, feed & seed	"	2,120	7,400	8,480
Total cash receipts	"	3,906	13,085	12,779
Crops	"	2,745	9,779	9,897
Other	"	1,161	3,306	2,882
Total cash expenditures	"	2,118	4,945	7,000
Feed purchased	"	105	360	517
Other livestock expense	"	50	90	134
Fertilizer and lime	"	62	352	779
Other crop expense	"	145	395	472
Machinery	"	977	2,221	3,061
Farm buildings, fences	"	245	458	425
Labor hired	"	186	383	436
Taxes	"	306	614	1,077
Other	"	42	72	99
Net cash farm income	"	1,788	8,140	5,779
Net farm income	"	2,627	8,930	6,367
Charge for capital	"	1,374	2,879	4,205
Return to operator & family labor	"	1,253	6,051	2,162
Purchasing power (1937-41 dollars)	"	1,253	3,068	983

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* Data from Farm Costs and Returns, 1955, Agr. Inform. Bul. 158, U.S.D.A., 1956, p. 42. (Figures for 1955 were preliminary.) Note: These are farms in a section of East Central Illinois and a small portion of Indiana.